EUROPEAN ECONOMY
BANKS, REGULATION, AND THE REAL SECTOR

WHO TAKES THE RISKS FOR FUNDING SMEs?

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European Economy
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2015.2

Who takes the risks for funding SMEs?

What is European Economy

European Economy – Banks, Regulation, and the Real Sector (www.european-economy.eu) is a new on line journal to encourage an informed and fair debate among academics, institutional representatives, and bankers on the regulatory framework and its effects on banking activity and the real economy. It is an independent journal, sponsored by Unicredit Group.

The journal aims at becoming an outlet for research and policy based pieces, combining the perspective of academia, policy making and operations. Special attention will be devoted to the link between financial markets and the real economy and how this is affected by regulatory measures. Each issue concentrates on a current theme, giving an appraisal of policy and regulatory measures in Europe and worldwide. Analysis at the forefront of the academic and institutional debate will be presented in a language accessible also to readers outside the academic world, such as government officials, practitioners and policy-makers.

Financing small and medium-sized enterprises (SMEs) is a key ingredient of economic growth worldwide. A quick restart of the credit cycle is particularly important after the long years of crisis and recession. But from the lenders' perspective, opacity and fragmented information still hinder the match between supply and demand for credit.

The recovery and the expansion of liquidity following the ECB's expansionary monetary cycle can only partially mitigate the risk of financing SMEs at current market conditions. Furthermore, prudential requirements can make Small Business Lending even more expensive.

The second issue of European Economy – Banks, Regulation, and the Real Sector examines which options can facilitate the matching of the demand and supply of SMEs financing. Can government guarantees play a leading role? Which structural regulations may reduce capital requirements for SMEs exposures? To what extent can non-bank financing channels, such as the stock market, expand? Can credit be provided on a Relationship lending technology rather than on parameters scoring?

EUROPEAN ECONOMY
BANKS, REGULATION, AND THE REAL SECTOR
YEAR 1 - ISSUE 2

European Economy – Banks, Regulation, and the Real Sector
is an online publication of the Review of Economic Conditions in Italy magazine.
Accessible free of charge at: www.european-economy.eu

Registrazione del Tribunale di Roma n. 13977 del giugno 1971

PUBLISHED BY
Europeye srl
via Gregorio VII 368 - 00165 Roma
t. 06 3700556 - www.europeye.com

ISSN 2421-6917

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From the Editorial Desk

Is special treatment for SMEs warranted?

by Giorgio Barba Navaretti, Giacomo Calzolari and Alberto Franco Pozzolo[1]

1. Why do we care?

Why do policy makers, the general public, business concerns and (less so) economists care so much about SMEs? Because SMEs account for a large share of employment and GDP in all economies, emerging or mature. Because all great things start small.

These two arguments are crucial and they should somehow be considered separately. Indeed, the first perspective is static, it is about the existence and the survival of a large share of the domestic economy in all countries. More than 99% of all firms in the European Union are SMEs, and this ratio is stable across all countries. They account for the large majority of employment, with an average share of 66.9% for the EU 28 countries and peaks of up to 79.6% for Italy and 73.1% in Spain (Figure 1 in the Numbers section). Most of these firms are in services and construction, with manufacturing accounting for around 20% in all EU countries. As a consequence of their aggregate size, SMEs account also for a very large share of banks' balance sheet to the corporate sector. As reported in Figure 6 in the number section, new loans to SMEs were around 27% of new loans to non-financial corporations in the Euro area, with peaks at around 40% for Italy and Spain.

The second perspective is instead dynamic, it is about favoring the reallocation of resources towards fast growing entities. Start-up firms plus fast-growing

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young firms historically have accounted for about 70 percent of gross U.S. job creation annually.[2] If most large firms start small, not all firms become large. As reported by DeYoung in this issue, about 50% of private firms born in the U.S. in 2009, and about 30% of U.S. firms that were already five-years old in 2009, had exited the market by 2014 (U.S. Bureau of Labor and Statistics 2015).

Hence, whether we consider smallness as a persistent or a transient state of affairs, the implications for financial markets and policy makers are quite different.

From the perspective of finance, the keyword is market failure. Whatever perspective is taken, the static or the dynamic one, if markets were functioning adequately we would not have an SMEs issue. Yet, as extensively discussed in most contributions to this issue, asymmetric information between financial institutions and firms restricts financing opportunities and the matching between demand and supply. Consequently, there is a clash between the real and perceived economic and social urgency of nurturing, fostering and supporting SMEs and the ability of markets to do so. In this issue we discuss extensively and put forward proposals and best practices. Outcomes are imperfect and there are large margins for improvement. But no all encompassing optimal solutions exist.

The aim of this issue of European Economy is to uncover how and under what conditions financing SMEs can achieve adequate levels of selectivity through market and non-market solutions. SMEs have no right to survive at all cost because they are such. Solving market failures, precisely means finding ways for being efficiently selective. This is the key message emerging from most contributions to this issue.

Also, we will draw a dividing line between the cyclical and the structural component of the argument. It is certainly true that SMEs became especially topical in the long years of the financial plus sovereign crisis. Even though the lending cycle was smoother for SMEs than for large corporates (Figures 4 and 5 in the Number section), several indicators show a higher level of distress for these companies, particularly at the peak of the financial crises: faster decline in profitability (Figure 16 in the Numbers section), a higher share of non-performing loans over total loans (Figure 14) and an increased number of these firms declaring a funding gap between their needs and the actual availability of funds (Figure 12).

2. According to estimates by Haltiwanger (2014), see DeYoung in this issue.

The policy reaction to this shortfall was massive. Besides for bailing out financial institutions in distress many measures were targeted to supporting SMEs. Capital requirements for lending to SMEs through the so called "supporting factor" where lowered in the European Union. Many European Governments and finally the European Union through the SMEs initiatives set up funds entirely or partially financed with taxpayers money directly investing in SMEs or providing credit guarantees. Finally, several liquidity windows set up by the Eurosystem and other Central Banks increased the viability of the packaging and securitization of loans to SMEs.

All these instruments are still in place, nurturing and supporting the economic recovery of the European Union and several other countries. The key question is whether these tools should still be in place once recovery has fully stabilized. Are in other words the market imperfections that have justified these measures during the crisis structural and still relevant in a better phase of the cycle? Or should they gradually be phased out towards a return to SMEs lending at market conditions? As we will argue below, the final objective of any action for SMEs support should be the restoration of a vibrant market for SMEs lending where the distribution of risks is efficiently dealt with by the market. For this reason several contributions in this issue of European Economy and this editorial discuss how the boundary between market and government based lending to SMEs can be pushed towards expanding the role of market based instruments, especially in good times.

However, it is also clear that many measures implemented during the crisis have a structural component, or should be assessed with reference to the overall evolution of the economic policy and the regulatory framework. As for public guarantees, for example, several contributions to this issue define benchmark conditions for these measures to be sustainable over time, and create financial additionality (i.e., provide credits that would have not been provided otherwise), as well as economic additionality (that is, job creation and value added that the market would fail to generate) with very low risks for the taxpayers' money used as a collateral.

As for the supporting factor, which is related to the regulation on capital requirements, this measure plays a crucial role during the negative phases of the economic cycle. But this measure also rebalances the structural tendency to strengthen prudential barriers to bank lending, which has an especially

severe impact on SMEs lending. The very introduction of this capital discount as an exception to the structural review and evolution of the regulatory framework, indicates that the real issue that should be under discussion is the revision of the overall regulatory framework itself, i.e the rule, rather than the supporting factor, i.e. the exception to the rule. Hence, for Small Business Lending, it is really imperative to clearly identify the trade-off between risk reduction and the expansion of loans, a question analysed in general in the first issue of European Economy. This type of lending is at the same time very risky and highly sensitive to capital requirements.

Finally, many contributions point out that there can possible options for strengthening the role of the market in SME financing: reducing the barriers to entry to the equity market; expanding options and reducing regulatory constraints to 'securitization'; improving and expanding venture capital markets; developing other, new alternative instruments and crowdfunding.

The fundamental point, however, is that these markets can be effectively expanded only if the information problem is significantly improved, or, in other words, if information asymmetries between firms and lenders are reduced. Several contributions to this issue examine how to move in this direction. In reality, the critical and crucial step is to encourage SMEs' attitude towards transparency. Only those firms willing to clearly disclose their numbers and business conditions will have in fact access to advanced forms of financing.

Still, since a complete transparency is unlikely to be achieved, and given that for smaller, and less dynamic firms this transition to transparency generally implies high costs, traditional banking loans will continue to play a key role for SMEs. Hence, in this context, long-term relationships based on qualitative, and non-standardized information will remain the most effective lending 'technology', that no financial innovation has yet been able to replace.

In what follows we will first discuss market failures affecting SMEs structurally and during cycles. Second, we will examine how market based solutions can compensate these market failures and which policies may support them. Finally, we will discuss policies, and particularly the question of capital requirements and the extension of public guarantees to support SMEs. Particularly in the last two sections we will focus on best practices and we will push forward proposals distilled from the contributions to the Journal.

2. Why special treatment? Identifying market failures.

Why do we think we need more, possibly fast growing SMEs than what we actually have in market economies? And why is there a special issue concerning SMEs financing? The reason is that we believe that markets do not function well when it comes to these small firms. In particular, there is a general consensus that SMEs are associated with specific market failures. These market failures justify targeted policy interventions.

First, SMEs' market for one essential input, financial capital, is distorted by *informational issues*, more than for large enterprises. *Second*, SMEs generate *external benefits on economy-wide efficiency*, for example in terms of external spillovers. In this respect, having fewer and smaller SMEs than what is efficient may negatively reverberate on other dimensions. If SMEs are more labor intensive than large firms (as often claimed, although with mixed empirical evidence), an expansion of this type of firms could guarantee increased employment. Moreover, if SMEs are more innovative than large firms (again a highly debated matter), the inefficient outcome is "multiplied" by a loss of dynamic efficiency and missed growth.

The presence of these two market failures (informational issues and externalities) implies that the size and the number of SMEs tend to be not optimal, with respect to what would be an efficient market organization. Yet, one should be cautious to conclude that the two market failures necessarily imply that there are too few SMEs and that these are necessarily too small.

For example, the fact that SMEs employ proportionally more labor than larger firms may be the consequence of the distortions previously mentioned on another important input, capital. In this case, a policy favoring SMEs to sustain employment may turn out to be even more distortionary, not targeting the heart of the issue. Or perhaps SMEs are not too few but too many, if they are unable to grow and exit from the SME status. Hence these failures do not justify loosening a highly selective approach to the SMEs question.

A key question that we want to address here is how these failures affect the provision of funding. Why do SMEs face more adverse credit conditions than larger firms? Why does size matter in the determination of the availability and the cost of credit?

The initial step is understanding the technology of lending and associated possible costs of bankruptcy (see the extensive treatment of this issue by

DeYoung and by Udell, both in this issues). Providing loans requires appraising borrowers, monitoring them, and other activities implying considerable per-loan fixed costs, i.e. independent of the size of the loan. A simple and immediate consequence of this cost is that, if lending rates reflects banks' cost structure, banks tend to charge higher interest rates for small loans than for large loans. Figure 8 in the Numbers section shows clearly that on average small firms pay 50 to 100 basis points more for loans in all the main European countries. This difference can rise to up to 250-300 basis points during serious market distress.

Bernanke and Gertler (1989) have also suggested that when bankruptcy costs faced by a bank (dealing with the bankruptcy of a debtor) are significant, firms with low equity, such as SMEs, will be (more) credit constrained (than firm with more equity). The reason for this failure of the Modigliani-Miller Theorem is that a highly leveraged firm faces a higher probability of bankruptcy due to more severe difficulty in servicing debt (for example when facing unexpected negative product demand shocks), so that banks require higher interest rates to more leveraged firms. Firms in turn react borrowing less than it would be required for the optimal size of their projects of investment. Fixed costs and bankruptcy costs imply that SMEs, when they have low equity, will face higher interest rates ceteris-paribus. Even though in recent years the capitalization of small firms has improved, and it is even higher than for large firms, this might partly reflect the reduction of the availability of credit during the crisis (see Figures 8 to 10 in the Numbers section). In general terms, the issue of the limited access of SMEs to the market for equity remains a serious impediment to their expansion.

Typically, entrepreneurs are endowed with different projects characterized by different levels of risks, the potential of which they know much better than potential lenders. The consequent inability of banks to carry out an adequate risk assessment of entrepreneurs and their projects and the consequent increase in interest rates generate a typical adverse selection problem. Safer borrowers refrain from borrowing. Rising interest rates will first increase banks' profits (when the price effect prevails), but then, as interests keep rising, profits decline because of growing impairment provisions facing non-performing loans. Hence, banks might prefer to cap interest rates and withhold loans: entrepreneurs with good and safe projects are left with too little or no borrowing.[3]

3. Stiglitz and Weiss (1981) provided a neat explanation of the specific issue of adverse selection.

This problem, of course, applies both to large and small borrowers and per-se cannot be an explanation of limited access to credit specific for SMEs. The presence of fixed costs in the lending activity now adds a special twist, together with asymmetric information, that works against SMEs in particular. The higher interest rate required for small loans because of fixed costs, makes the adverse selection in the pool of SMEs borrowers even more likely than for large firms. Importantly, one should notice that the adverse selection in the pools of SMEs that are funded anyway implies that "many", possibly too many, risky and inefficient small firms get financed, whereas deserving ones get excluded. In other words there is not just an issue of insufficient financial capital for SMEs but also an issue of an inefficient composition of the pool of *actual* borrowers. This argument is consistent with the evidence reported in Figure 14 in the Numbers section of this journal, that small firms have a much higher rate of non-performing loans than large ones.

On top of this it is also well accepted that SMEs are more opaque than large firms, so that the issue of asymmetric information is even more severe. Large firms are subject to more intense informational obligations (that could not be replicated to small firms, again for an issue of fixed costs and scale of activity) which allow banks to better asses and separate their risks. Younger firms, that tend to be smaller for obvious reasons, are even more opaque for banks because signals concerning profitability and riskiness need time to be accumulated, making adverse selection stronger for younger and thus smaller firms. As shown in Barba Navaretti et al (2014), these are also the fastest growing small firms.

The informational issues in lending does not uniquely refer to adverse selection as another source of problem affects the lender-borrower relationship, that of imperfect monitoring and consequent moral hazard.

In a highly leveraged firm, whatever its size, a larger share of the total expected gains in case of success go to the bank and relatively less in the hands of the entrepreneur.[4] Thus, little equity and high leverage induce managing entrepreneurs exerting too little of their costly effort and firms less likely to repay their loans. This moral hazard issue is generated by the absence of observability or verifiability of the entrepreneur effort by banks who will thus react constraining the credit to small firms that have typically little equity.

4. Even though the return on equity will be higher.

On a similar vein, since a debtor has often the ability to capture some of the assets in the case of default, the entrepreneur of a highly leveraged firm faces higher incentives to default. Banks then react restraining credit and requiring larger collateral and equity. Again, small and young firms that are typically less capitalized and with limited collateral to provide, suffer more than larger firm from this credit constraint.

Summing up, **market failures can not only generate an inefficient amount of financing, but also a wrong allocation away from the most deserving borrowers**.

3. Why special treatment? Are SMEs especially exposed to negative cycles?

Loans to SMEs dropped significantly during the Global Financial Crisis (Figures 4 and 5 in the Numbers section), and financing conditions have become particularly severe in Europe as a consequence of the sovereign debt crisis, especially in the peripheral countries, although some signs of improvements have been seen starting in 2012 (Figure 6).

However, despite the strong effects of the financial crises, bank credit to SMEs remained much less cyclical than bank credit to larger firms. Even along the global financial crisis and the subsequent sovereign crisis, the drop in the value of new bank loans granted in the euro area was stronger for those above € 1 million than for those below that threshold, that are typically granted to smaller firms (Figures 4 and 5).

The reasons why banks smooth their credit supply across the business cycle, especially in the case of loans to borrowers that are more dependent on bank credit, such as SMEs, are indeed well understood. In a seminal paper published in 1994, Petersen and Rajan argue that small and opaque borrowers have an incentive to build a long-term lending relationship with banks, in order to reduce information asymmetry problems. Since lending relationships need time to be develop, once they are established they provide substantial market power, that banks can exploit by requiring higher than average interest rates. A the same time, to preserve the value of established lending relationships, banks have an incentive to guarantee stable credit supply, especially

in terms of quantities. Clearly, this is much less likely to happen in the case of large firms, that suffer less from problems of information asymmetries and can switch more easily across different funding products and providers, therefore limiting banks' market power. For this reason, bank credit to larger firms tends to be more cyclical than credit to SMEs.

From the point of view of SMEs, the ability of banks to smooth credit supply along the business cycle is certainly beneficial, even if it comes at the cost of higher average interest rates. The more so since SMEs depend for their external financing almost entirely on banks. From the point of view of banks, smoothing credit conditions across the business cycle clearly has a cost, but this is an activity in which banks have a strong comparative advantage with respect to other financial intermediaries, and that is rewarded by the higher average interest rates that are paid by on loans to smaller and more opaque firms.

However, the ability of banks to smooth credit supply across the business cycle clearly depends also on what the determinants of fluctuations are. Banks are in a much worse position to smooth fluctuations that are caused by shocks to the financial sector than to smooth shocks to the real economy. The global financial crisis and, even more, the European sovereign debt crisis are clear examples of cases in which the worsening of the business cycle was in large part caused by a drop in credit supply. Interestingly, also in this case bank credit to SMEs dropped less than that to larger firms (Figures 4 and 5). But since smaller firms are more dependent on bank financing, they suffered more from the credit crunch than larger corporations. From the point of view of banks this can indeed be a huge problem, since by cutting credit supply they may cause some of their borrowers to go bankrupt, thus amplifying the business cycle and creating the conditions for a worsening of their own loan portfolio. According to EBA (2015), at the end of 2014 the incidence of non-performing loans to total loans to SMEs in the European Union was 18.6%, exactly twice the ratio for loans to larger firms. Indeed, the evidence in Ferrando et al. (2015) confirms that European SMEs suffered a strong drop in credit supply during the crisis. Similarly, DeYoung (2015 and this issue) presents evidence that American SMEs suffered more than larger firms during the GFC.

In this case, **temporary policy interventions that help stopping this potential spiral may have relevant effect on aggregate welfare.** In fact,

the smother cycle of SMEs lending could probably partly be also explained by the massive increase in the use of public guarantees and other forms of direct support to SMEs during the crisis.

4. How to make the special case less special? Market solutions to the information issues

There are large margins for making markets more effective in funding SMEs and partly compensating market failures. The range of options goes from improving the information set on SMEs, to expanding markets for specialized finance and non-bank sources of funding, to strengthening mechanisms for risk spreading.

In our view **improving the information set is the key strategy for making SMEs lending more efficient and selective**. The principle that only firms able to provide qualified and certified information can have access to funding, i.e. I fund you only if you are transparent, should permeate the governance and the culture of SMEs in their relationship to potential funders (see Di Noia et al in this issue).

There are certainly margins for expanding the role of non-banks forms of funding, from specialized finance, to equity, to securitization. **This market space may expand both in the high and the low end of the financing business**.

The high end involves the access of SMEs in market segments generally conceived for large firms, through an evolution of the corporate culture and investments in providing broad and accurate information on their business conditions. At the same time it involves making this access easier and less costly through a reduction of the regulatory burden and administrative procedures. The same transparency and evolution of the business culture of SMEs is required for entering market segments targeted for innovative firms, like venture capital or start-up funding, where risks are very high and information limited by definition.

But there are margins of expansion also of the **low end of the market**, where the information process cannot be sorted out through an increase transparency. The lending technology (see Udell in this issue) here is either asset based, i.e. where funding is guaranteed through non opaque assets, the quality

and value of which is easily identifiable; or based on verifiable performance records as in crowdfunding; or based on sufficiently high interest, not capped by regulatory ceilings, and sufficient to compensate lenders against very high risks (see Mc Murray in this issue).

Even if there are margins for non-banking markets, based on different ways of sorting out the informational problem, we believe that **banks will remain dominant in funding SMEs**. In particular the opaqueness of SMEs make it difficult for funders to acquire a broader information set on borrowers than what can be acquired through a long term banking relationship, even if these information sets are highly improved and standardized. DeYoung in this issue, looking at the US market, strongly supports the use of relationship lending in funding SMEs. This may appear a 'back to the future' option, in contrast to the view of fully informed modern markets. **But the bottom line is that modern markets have not yet found technologies able to replace fully behavior based knowledge, as in relationship lending, with standardized information.**

Indeed, as it will be clear from the following discussion, different financing technologies and providers may address different market failures, albeit imperfectly. Yet, as far as market imperfection persists, market mechanisms based on fully transparent and standardized information will keep limping. We will discuss in section 5 the scope for public policy and state funding in this domain.

4.1 Increase transparency and improve the information set

One basic option which has to do with policy and regulation, is the aggregation of business registers at the European level, as suggested by Di Noia et al. (this issue). In addition to reducing the negative externalities associated with SMEs lending in equilibrium conditions these policies would also help attenuating the cyclical consequences of an exogenous shock on credit supply. Equally, business practices can themselves lead to improving the information framework, as far as provider of funds may ask for transparent information from SMEs like audited balance sheets. Of course there is a trade-off, in that the information burden certainly rises fixed costs for SMEs and might deter entry. All the same, this is an area where there are large margins for improvements.

Another way of producing standardized information is ratings, that in the case of SMEs is becoming more and more common, especially because they are in-

creasingly requested by banks. banks. The technology for rating SMEs' debt is essentially the same as that of the credit-scoring techniques used by banks. The advantage of making these information available outside the perimeter of the bank is nonetheless that of making SMEs' financing less dependent on the conditions of bank credit supply, partly addressing the issue of cyclicality discussed above.

4.2 I know who you are: relationship vs transaction based lending

Information asymmetries, generating adverse selection and moral hazard, explain the importance of long term relationships between lenders and SME borrowers. Good entrepreneurs will prefer long relationships with banks, generating a large stock of shared information and mitigating informational asymmetries, because this allows them to be identified and treated differently from riskier entrepreneurs. These, instead, are more likely to rely on shorter relationships. Repeated interactions between a borrower and a lender may allow to (partially) reduce the risk of moral hazard because by shirking the entrepreneur now puts at risk the entire future profitability associated with the relationship with that particular lender. This (at least partially) explains why older firms face less credit constraints with their usual lenders.

Information had indeed been in the spot of economic research in the last decades and it has proven to be a very subtle and sophisticated ingredient of virtually any economic and financial transaction. Not only the lack of information generates the mentioned market failures, but information itself is difficult to handle as an input in the transaction/production process. In particular, two types of information are relevant, "hard" information that can be easily codified and interpreted in an unambiguous way such a credit score, and "soft" information that instead is characterized by subjective evaluation both in the transmission of information and in its interpretation, such as the "feeling" a banker may have concerning the credibility of a good borrower.

Since, as we have previously argued, information on SMEs tends to be opaque and there are fixed costs to generate "hard" information (which can be justified by the scale that SMEs lack), lending with SMEs tends to be more based on "soft" information and the associated form of "relationship-based lending". Larger firms are instead less opaque, are obliged to provide many different types of "hard" information and then they can be dealt with by banks more with transaction or arm's-length lending.

This simple but important observation (see Petersen and Rajan, 1994 and 1995; Berger and Udell, 1995; Stein, 2002, for early contributions) has deep consequences on the structure of the lending market for SMEs, as extensively discussed by DeYoung and Udell in this issue. Once a long term relationship between the banker and the local borrower is built on the premises of "soft" information, the cost of switching for the borrower can be very high because all the soft information will be lost even if the former banker is obliged to disclose the information to possible competing banks. Although verifiable credit history can be transferred (and public intervention may make this transfer compulsory), still some of the dimensions of bank relationship are based on non verifiable and soft information that cannot be easily transferred. Hence, the very same informational issues that induce credit constraints also constrain competition for lending to SMEs.

Relationship lending could also explain why the lending cycle has been more stable for SMEs than for large companies, as shown in section 3. DeYoung in this issue notes that "small business clients of commercial banks that are less dedicated to relationship lending bear the risk of being credit rationed during economic downturns", while during the financial crisis, a small group of banks in the US that were using a relationship-based business lending model did not reduce but instead increased their credit supply.[5]

4.3 Non-bank financing: from equity to shadow banking

As already discussed above, SMEs are far from a uniform set of firms. As such, they can have very different opportunities to access non-bank financing, depending on their sector of economic activity and other idiosyncratic characteristics.

Venture capital specifically deals with the problem of information asymmetries for young and innovative firms with risky activities and potentially strong growth prospects. Typically, venture capitalists act as external shareholders that provide funding to entrepreneurs with limited financial resources. The activity is risky, due to the high default probability of young firms, but venture

5. Interestingly the evidence shows that relationship lending is not strictly the domain of small local banks but it is also relevant for banks with cross border operations, depending on how these operations are carried out. Hoffman and Sorensen (2015) and IMF (2015) stress that while banks with a higher incidence of wholesale cross-border funding reduced significantly their credit supply, the subsidiaries of foreign banks helped attenuating the credit crunch in host economies. If this is true, capital surcharges required to SIFIs should not be based on the value of their assets held through foreign subsidiaries.

capitalists have two levers to address the problem: they have sufficient knowledge of the business of the entrepreneur so as to be able to monitor efficiently its activities, thus overcoming most information problems; and they have a diversified portfolio, so that the large profits from successful projects compensate for the losses caused by the ones that default. As Udell emphasizes in this issue, it is the monitoring activity of venture capitalists that is rewarded with extra profits, as shown by the fact that the returns to limited partners, that only provide the funding, have not been significantly higher than the market return since the 1990s (Mulcahy, Weeks and Bradley 2012). However, even active venture capitalists can reap satisfactory rewards only if they can sell their participations once the firm is listed. A well-functioning venture capital market requires therefore skilled financiers, with an adequate knowledge of the business that they finance, and an efficient stock market, where prices of IPOs fully reflect the value of the firm that is going to be listed (Felix et al., 2013). In very few countries outside the United States both these characteristics are present at the same time, and indeed venture capital is not a common source of funding in Europe, with the only possible exception of the UK. Moreover, since venture capitalists profit from the success of a small number of firms that deliver extremely high returns, it can only be used to finance activities with high expected returns, typically in risky and innovative sectors, and not to provide funds to older and more stable SMEs.[6]

Equity has a crucial role in addressing information issues. Since SMEs are by and large unlisted corporations owned by a small number of individuals, often members of the same family, equity financing typically implies a nearly perfect control of the firm by part of the investors. Clearly, problems of limited information are in this case irrelevant. However, since families and their potential friends are unlikely to have unlimited resources to invest, profitable opportunities are frequently lost because of lack of financing. This is even more problematic in the case of young and innovative firms. Opening to external equity funding may in these cases be extremely difficult, due to agency problems among majority and minority shareholders, leaving debt financing as the only viable alternative.

6. An alternative source of equity financing often compared to venture capital is private equity. However, private equity is more often used to address agency problems between managers and shareholders, and typically suffers of the same problems in the cost of collecting information as all other forms of SMEs financing.

Indeed, at the beginning of the last decade, the share of equity financing over total liabilities of SMEs in the Euro area was lower than that of larger firms. However, this situation changed in recent years. This shows that SMEs are progressively finding ways to overcome information problems and find investors willing to share the entrepreneurial risk, partly helped by initiatives like stock markets dedicated to small firms and the diffusion of private equity funds.

Crowdfunding is a recent and innovative way of funding SMEs that may sustain the positive trend in the share of equity financing. As it is well explained by Udell and McMurray in this issue, crowd-funding is based on the use of internet platforms that allow entrepreneurs to tap small individual investors. A crucial advantage of this transactions-based technology is that it reduces significantly the fixed costs associated to other forms of arm's length external financing. However, only if the entrepreneur raises funds from within the network of its relationships, that are clearly better informed than the average potential financier on the nature of its project, or borrowers can be evaluated on the basis of their long term performance within the network, this technology can help overcome the information problems that are at the root of the difficulties of SMEs financing.

Commercial credit is one of the most largely used forms of debt financing for SMEs. They are a relationship based technology, since they are granted by the commercial partners of a firm, that typically have better information on its activities than the average financiers. However, precisely because commercial credits are granted by commercial partners, and also because they are related to specific transactions, like in the case of factoring, they are likely to be a substitute only for short-term working capital loans, and not for investment loans.

Shadow banking is also creating new market niches to address the strong need of SMEs for alternative sources of financing. As discussed by McMurray in this issue, specialized intermediaries that can require interest rates in the order of 2-6% per month for short term working capital loans are emerging in the UK. On the one hand, the fact that borrowing at such high rates can still be economically viable for some SMEs shows that fairly unexpected market equilibria can emerge. If these forms of financing tap the worse tail in the quality distribution of borrowers, such high interest rates adequately compensate the actual risk and the probability of default of these borrowers. On the other hand, if these instruments finance firms that could have access to funding at much better conditions

under complete information, they could merely reflect the extent of market failures in other segments of the market. Indeed, in countries like Italy interest rates at these levels would be considered usury and therefore illegal.

McMurray also points to the emergence of other non-bank intermediaries that are specializing in longer term SME financing. The issue in this case seems to be related to bank regulation and the steady growth of shadow banking businesses, as discussed in this issue also by Di Noia et al. in this issue. However, from a conceptual point of view, there is no value added in these forms of financing, that suffer of the same problems discussed above and seem to profit only from the exploitation of regulatory loopholes.

As a final note we should recall that, in most cases, alternatives to bank loans are offered by or through banks. In many countries, venture capital funds are controlled or participated by banking groups, bond underwriting is performed by commercial banks, securitizations are made mainly on bank loans. How far business models where banks diversify into activities in competition with their traditional lending activity are efficient it is not clear and not the object of this issue. The impact on these equilibria and on the emergence of new specialized intermediaries of entry costs, regulatory and fiscal biases should be carefully analyzed. Perhaps another issue of European Economy!

4.4 Spreading the risk through the market: securitization and bond pooling

For large firms, a major alternative to bank loans is to issue bonds. However, as Di Noia et al. forcefully remark in this issue, the crucial problem of this form of arm's length financing is the cost of acquiring adequate information on a firm's activities before buying its bonds. In addition, in the case of arm's length financing, such as bond issuance, fixed costs can represent an important constraint for SMEs.

A number of options have been proposed to address these problems. Securitization of pools of loans to SMEs is a tool to increase the availability of resources for these firms. While this technology requires loans at origination, it nonetheless helps lenders like banks to remove the credit risk from their balance sheets and at the same time obtain additional resources to grant new loans. However, the financial crisis has clearly shown that information asymmetries make it very hard to find the right balance between information production and risk transfer in the origin-to-distribute model of bank lending. Indeed, as ar-

gued by Udell in this issue, especially in Europe, the recovery of the market for securitizations is in large part explained by the possibility to use asset backed securities as collateral in central bank financing operations. Therefore the risk (and consequent capital absorption) remains in banks' balance sheets. Whether in the coming years it will be possible to build a market for the securitization of bank loans to SMEs seems still to be an open question. To reduce the fixed costs of bond issuance, one option is to reduce the regulatory burden in the case of issues by SMEs. In Italy, this policy has recently been introduced for the so-called mini-bonds. However, these policies do not address the problem of the costs of producing information on the borrowers, one of the major reasons why mini-bond subscriptions are restricted to specialize investors, that in theory should be better able to evaluate their riskiness. One interesting further step, as suggested by Di Noia et al. in this issue, could then be to aggregate bond issues in pools, by groups of SMEs, sometimes interconnected either because they operate in the same industrial district or within a vertical production chain relationship, so as to smooth idiosyncratic risk and to increase liquidity. These financial products would be very similar to a securitization.

5. And what for policy and regulation?

So far for the market. But is there room for a policy or a regulatory induced expansion of funding to SMEs? In the institutions section of this issue readers will find an extensive description of policy measures adopted especially by European policy makers to support SMEs. Many of these measures have been designed and implemented after the start of the financial crisis. They imply direct intervention by public institutions like the the European Investment Bank Group (EIB) and national agencies through loans and equity, as well as other risk sharing instruments; the creation of public or semi-public guarantee funds; several measures to ease the securitization of SMEs loans, especially aimed at reducing informational barriers. And finally ad-hoc measures to alleviate capital requirements for lending to SMEs.

In this editorial we focus our discussion on capital requirements and on the provision of public guarantees. Both these measures aim at expanding lending to small and medium enterprises, by reducing its cost in terms of capital absorp-

tion. Yet they have different implications in terms of the distribution of the risk to lend to SMEs. A reduction in capital requirements concentrates this risk on banks' balance sheets (and eventually on resolution funds and taxpayers in case of default), as capital buffers facing these risks are reduced. Public guarantees instead lift away this risk from banks balance sheets and spread it on taxpayers. We discuss these two measures in turns.

5.1 Capital requirements.

As discussed in the first issue of this journal in 2015, there is a likely trade-off between achieving financial stability through the expansion of capital buffers in banks' balance sheets and credit expansion. Given that SMEs account for a very large share of bank lending, and given that these firms rely overwhelmingly on banks funding, they should be especially sensitive to the rise in capital requirements envisaged by the transition from Basel II to Basel III and by other measures under implementation or still under consultation.

But the fact that SMEs are in aggregate very large borrowers is not enough to make their case a special one. To clarify this question we should first understand if exposures towards this group of firms involve higher capital absorption than to large corporates. This is difficult to estimate, as risk weighting is affected by whether banks use the standardized or the Internal Rating Based (IRB) approach and by whether loans are classified as corporate or retail. Still BIS estimates, reported in the recent Basel Committee's Consultative Document on the Revisions to the Standardised Approach for Credit Risk, indicate "*that risk weights on SMEs are, on average, higher than risk weights on other corporates. In particular, according to the data collected, the average IRB risk weight of large internationally active banks on SME corporates is more than double the average IRB risk weight on other corporates*" (BCBS, 2015).

If the negative effect of extra capital requirements on lending is larger the higher are capital requirements and if capital absorption is higher for SMEs than for other corporates, then a tightening of capital requirements will especially affect this group of firms. Several contributions in Issue 1/2015 of this Journal argued that evidence based on dynamic general equilibrium models find an inverted U shape relationship between bank lending and capital requirements, and estimate that the optimal level of regulatory capital should be in the range of 8 to 14%: capital requirements above these values may have an inhibit-

ing effect on the real economy activity (see Clerc in issue 1/2015 of this journal). This implies that lending to SMEs is especially sensitive to the tightening of capital regulations.

The paper by Udell in this issue reports several pieces of evidence supporting the view "*that concerns over the effect of Basel III is not without some justification*". But also that this evidence is pretty muddled once we consider all the different technologies available for lending to SMEs and how far they are exposed to regulatory changes. What matters from the point of view of the borrower is the net effect, as some lending channels might contract and others expand. And this effect might vary considerably across countries. Clearly if (i) capital requirements address predominantly technologies related to bank lending, (ii) banks are the dominant lenders to SMEs, and (iii) markets for alternative funding are underdeveloped, SMEs are unable to carry out these regulatory arbitrages between alternative lines of funding. The empirical evidence reported by Udell also shows that the impact of more strict capital requirements clearly depends on the initial conditions of banks. Lending by banks which are initially capital constrained is especially severely affected by a tightening of the regulatory environment.

So there are theoretical arguments and a mild empirical evidence supporting the view that a high capital absorption for loans to SMEs and the transition from Basel II to Basel III might constrain lending to this group of firms.

The question, then, is whether and how far high capital requirements simply reflect the higher risk of loans to SMEs or whether they reflect some bias in the regulatory framework. The evidence on non-performing loans and of the rapid deterioration of SMEs balance sheets during the crisis supports the view that these firms are especially risky borrowers. It could also be argued that in the aggregate SMEs provide a much broader diversification of risk from idiosyncratic shocks or shocks arising from the real economy. Yet, this is no longer the case in systemic financial crisis, precisely as shown by the faster deterioration of riskiness indicators for SMEs than for large corporates during the global crisis.

So the view that SMEs are especially risky with a higher probability of default than large corporates is supported by the recent evidence on the impact of the financial plus sovereign crisis. Also, as argued above, market imperfections and asymmetric information make lending to these firms especially risky.

Once this structural higher risk of SMEs is taken into account, it could still be argued that regulatory requirements are more demanding than this higher risk would in fact require. Or in other words that the regulatory framework considers lending to SMEs more risky than what it is in fact. It is difficult to assess whether this is the case in the present framework. What is certainly true is that an optimal regulatory scheme should indeed take into account the actual trade-off between reducing risks and hindering credit expansion.

Precisely limiting the negative impact of capital requirements on SMEs lending is the rationale of the SMEs supporting factor, introduced by the Capital requirement Regulation of the European Commission to reduce the total risk weighted exposure of SMEs lending. This capital discount, implemented in January 2014 and subject to a potential revision in 2016, aims at reducing capital requirements for banks active in SMEs lending, that should in turn use this capital relief to provide further credit to SMEs. See the Institution section for a discussion of this measure.

EBA has launched a call for evidence to assess the effectiveness of the supporting factor. The reported preliminary evidence shows that EBA's reporting banks increased their CET1 ratios by 0.19% on average in 2014Q4. In terms of capital saving, this increase generated a 10.5 billion € capital relief for EBA's reporting banks, although the distribution across countries displayed strong heterogeneity, because of the different exposure to SMEs. More than 50% of this freed up in capital is in fact concentrated in Italy, France, and Spain, the countries with the largest share of SMEs.

According to these estimations, this measure has therefore been quite effective in freeing capital and extra lending space in favor of SMEs. And it has provided a competitive rebalancing for banks that operate in countries with a stronger presence of SMEs towards other European competitors. The question is whether these conclusions should support a structural use of the supporting factor, even after the revision of 2016 or whether it should merely be considered as countercyclical measures.

It will of course depend on the status of the economic recovery. In a phase of expansionary economic policy, with still clogged channels of transmission of the monetary stimulus and a colossal amount of non-performing loans on banks' balance sheets, the countercyclical impact of lifting this measure should be evaluated with extreme caution. Probably the burdens inherited from the long years of the financial plus sovereign crisis should be sorted out first.

On a more structural ground, this policy is justified only if the regulatory framework is unable to provide an optimal balance between reducing risks and a sustainable credit expansion. In other words if the regulatory framework is indeed distorted or unable to achieve its objectives.

Yet, if this were the case, wouldn't it be more efficient to directly change overall rules on capital requirements, rather than correcting them through exceptions? If capital requirements are too high to support lending expansion in general, they should then be reduced permanently with no need for corrective measures. We understand this might be demanding in political terms in the framework of global negotiations. But at the same time this is what mere logic would call for.

Of course if, instead, there are no distortions in the regulatory framework and lending trends are adequate, then since the supporting factor implies that banks reduce their ability to face potential losses, the costs of the policy in the event of defaults would be borne by other banks, if the industry funded recovery and resolution funds have sufficient capacity, or by the taxpayers, if a public back-stop becomes necessary.

In light of these arguments the future envisaged tightening of capital requirements on banks' lending to SMEs should be considered with extreme care. The Basel Committee on Banking Supervision has recently launched a consultation on a revision to the standardized approach for credit risk, which has important implications also for the IRB approach. In particular the Committee is investigating the suitability of substituting external ratings with a some measures of risk drivers that should be simple to use, intuitive, readily available and capable of explaining risk consistently across jurisdictions. Several comments to the consultative document from representative of the banking industry have argued that these procedures can create severe distortions against SMEs' lending. Capital requirements proposed by the Basel Committee would indeed raise the risk weighting parameters for lending to SMEs, especially highly leveraged ones. Given that these requirements would provide risk weighting floors for IRB assessment, they would also lift risk weighting for banks using this approach.

In light of this, the Standardized approach should certainly be simple, but not err in being simplistic. Although this seem obvious, it is less so when one tries to identify simple risk drivers to be used for this approach. For example, using a company's revenue as a crude measure of firms' size as one of the few

(two or three) risk drivers of the new Standardized Approach, may turn out to be excessively simplistic and generate a considerable impact on capital absorption.

This discussion shows that the issue of capital requirements on lending to SMEs is extremely complex and it requires special attention and a deep and balanced assessment of their impact on the trade-off between risk reduction and economic growth. Therefore, our concluding comment is that it is necessary **to assess very carefully potential distortions and suboptimal outcomes induced by capital requirement regulations. If distortions exist, lift them, rather than correcting a suboptimal regulatory framework through exceptional and equally distorting provisions.**

5.2. Public guarantees and public funding

A second crucial policy and regulatory issue concerning SMEs is the very fast rising of public guarantees and public funds in supporting SMEs during the crisis. According to the OECD, public guarantees on SMEs loans in Italy rose from around 2 billion in 2007 to 12 billion by 2014, reaching values comparable to those of France and Spain (see Figure 18 in the Numbers section). Public guarantees rose considerably also in the US during the crisis.

These instruments, by lifting risks from banks balance sheets and consequently reducing the capital absorption cost have clearly enhanced the sustainability of loans to SMEs during the crisis. They might also explain the limited cyclical downturn in these loans observed during the crisis (see section 3 of this editorial).

In general terms, guarantees are justified under one of the following three conditions, as discussed by Gozzi and Schmukler and by Revoltella and Kraemer-Eis in this issue. First, guarantors have better information on the pool of borrowers and can deal with the market failures arising from asymmetric information better than other entity. Second, lenders can help spreading and diversifying risks in directions not available to lenders. Third, they can be used for regulatory arbitrage, as guarantors may face different regulations than lenders.

These three conditions do not necessarily imply public funding. A large numbers of private Mutual Guarantee Associations (MGA) have been set up in many countries. It is however obvious that particularly during a negative swing of the cycle the availability of MGAs and other forms of private guarantees becomes limited. For this reason during the crisis many public guarantee schemes were set up and increased public funding was provided to MGA.

Public funds in this domain have a cyclical impact but they are precisely targeted at solving market failures. The crucial issue is therefore how far their design is effective in addressing these failures. This can vary along many domains: management structure, type of guarantees, coverage ratio and pricing. Gozzi and Schmukler in this issue provide very useful guidelines for best practice guarantee funds.

First, **schemes should not be solely public managed but in conjunction with private lenders like banks or MGAs.** Public agencies do not have better information than MGAs or banks in selecting creditors and in processing loans. In most countries loan assessment and recovery is typically undertaken by the lender.

Second, **the coverage ratio, i.e. the fraction of the value covered by the guarantee should be less than 100 percent. Part of the credit risk should remain with the lender.** This measure helps aligning the incentives of the lender and the guarantor, and force the former to carry out an adequate assessment of the borrower.

Third, **the processing of claims should be rapid and transparent and based on clearly defined ex-ante rules.** Costly and time consuming procedures reduce the transparency and the appeal of the scheme.

Fourth, **fees charged by the guarantor to the lender should be able to guarantee the financial sustainability of the guarantee fund.** This principle really depends on the characteristics of the fund and of the guarantor. If the guarantor has an informational or an enforcement advantage over the lender, it should charge high enough fees to cover its expenses and credit losses. Public guarantee funds might not follow this rule as far their fee structure involves some level of subsidization towards the lender addressing some market failure. Clearly then these funds face the issue of the long term sustainability of their activity.

As argued by Gozzi and Schmukler the performance of public credit guarantee scheme in terms of their financial sustainability" *has been mixed, at best"*. Consequently these funds clearly imply a transfer of credit risk from lenders to tax payers. In order to evaluate the rationale and the scope to use of tax payers funds two it is necessary to understand if these funds generate financial and economic additionality.

Financial additionality refers to whether these funds generate extra borrowing and loans at better conditions for SMEs to what would have happened in ab-

sence of the scheme. Even though very difficult to assess empirically, most studies find evidence of positive financial additionality of public guarantee funds. The extent of this additionality crucially depends on the competitive framework of the financial market. In fact, banks with market power can (at least in part) appropriate the subsidy and prevent the deployment of the possibly positive effects on growth of credit for small constrained firms.

Despite financial additionality, Gozzi and Schmukler report also evidence of "*sizeable displacement effect and dead weight costs*" related to these schemes. For this reason the best practice ingredients outlined above are crucial. Finally evidence on *economic additionality* is very difficult to identify, even more than financial additionality. Economic additionality also look at the effects of the scheme on the real economy, in terms of creation of employment and value added. On this there is no conclusive evidence, even though this is a crucial element in assessing the merit of these schemes.

Summing up, public guarantee funds, if well designed can certainly address part of the market failures arising from SMEs lending. The question, though, is how far these schemes should be considered only as cyclical devises or whether they have a structural function. Here too the jury is still out. They are certainly instruments targeting market failures more directly than the supporting factor, so their structural function, again if they are designed according to best practices, has an economic rationale. At the same time it is true that market failures become especially severe in negative swings of the cycle, so possibly some of these schemes set up during the crisis might be phased out when recovery is finally consolidated, and market conditions are strengthened again.

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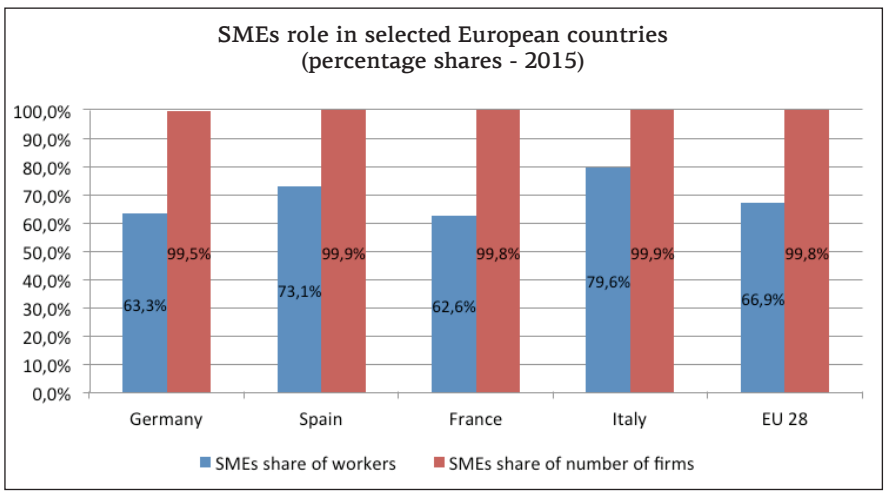
Numbers

by Maria Teresa Trentinaglia[7]

The role of SMEs in European economies

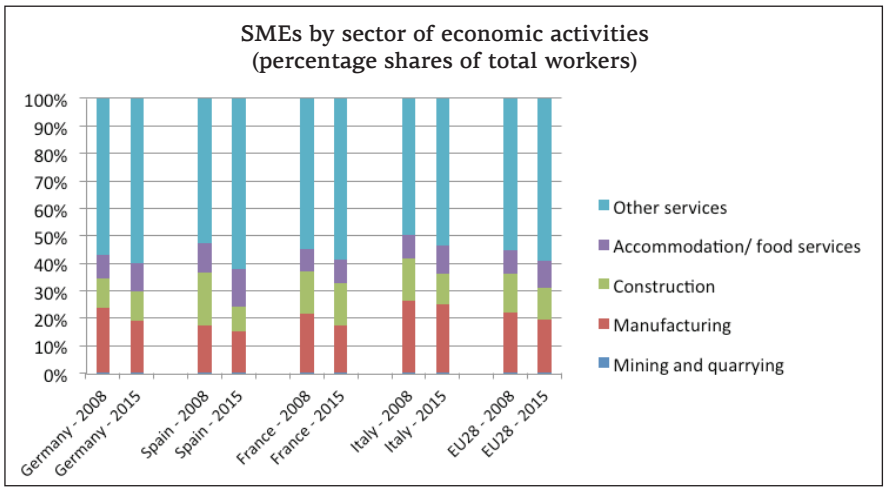
Figure 1



Source: *European Commission, Annual Report on European SMEs. According to the EU recommendation 2003/361, firms with less than 250 employees and an annual turnover not exceeding 50 million € (or a balance sheet total not exceeding 43 million €) are classified as SMEs.*

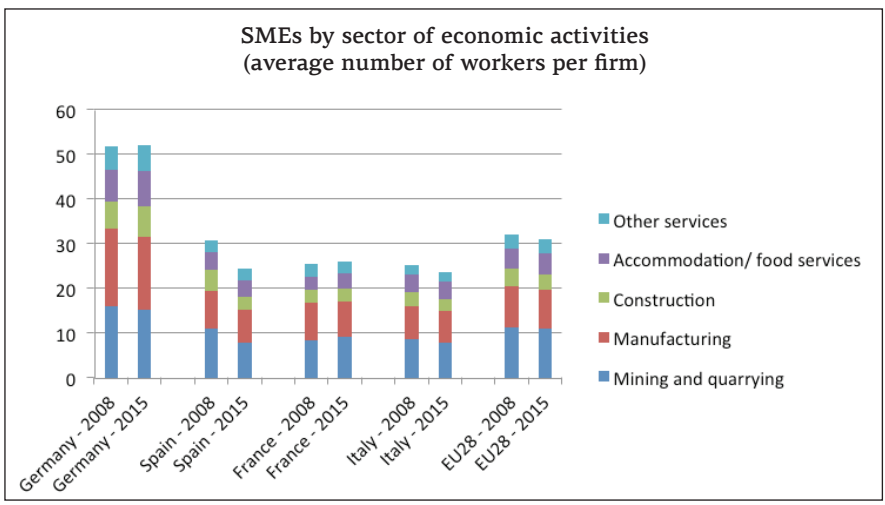
7. University of Milan

Figure 2



Source: *European Commission, Annual Report on European SMEs. Other services include Electricity, gas, steam and air condition supply; Water supply, sewerage, waste management and remediation activities; Wholesale and retail trade, repair of motor vehicles and motorcycle; Transportation and storage; Information and communication; Real estate activities; Professional, scientific and technical activities; Administrative and support services. Sectors are classified according to Nace Rev. 2.*

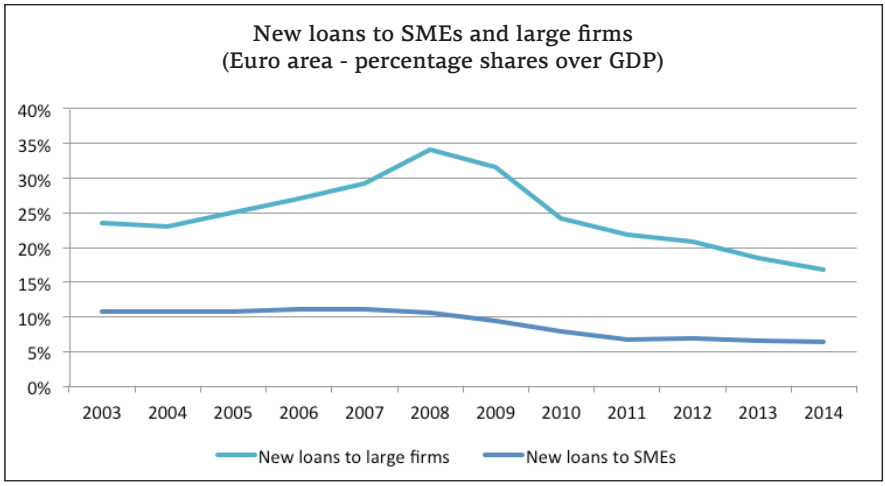
Figure 3



Source: *European Commission, Annual Report on European SMEs. Other services include Electricity, gas, steam and air condition supply; Water supply, sewerage, waste management and remediation activities; Wholesale and retail trade, repair of motor vehicles and motorcycle; Transportation and storage; Information and communication; Real estate activities; Professional, scientific and technical activities; Administrative and support services. Sectors are classified according to Nace Rev. 2.*

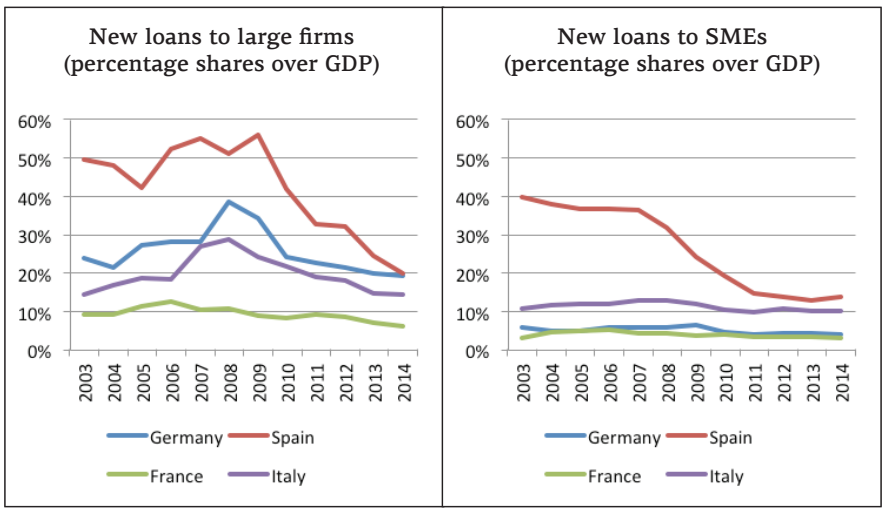
The importance of Small Business Lending for Banks

Figure 4



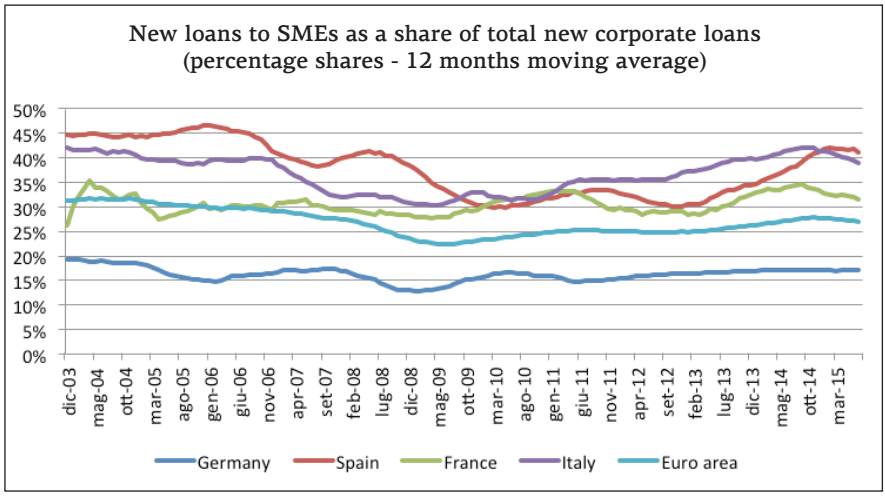
Source: ECB Statistical Data Warehouse. New loans to SMEs are defined as loans to non-financial corporations, new business, of value up to and including 1 million €. New loans to large firms are defined as loans to non-financial corporations, new business, of value over 1 million €.

Figure 5



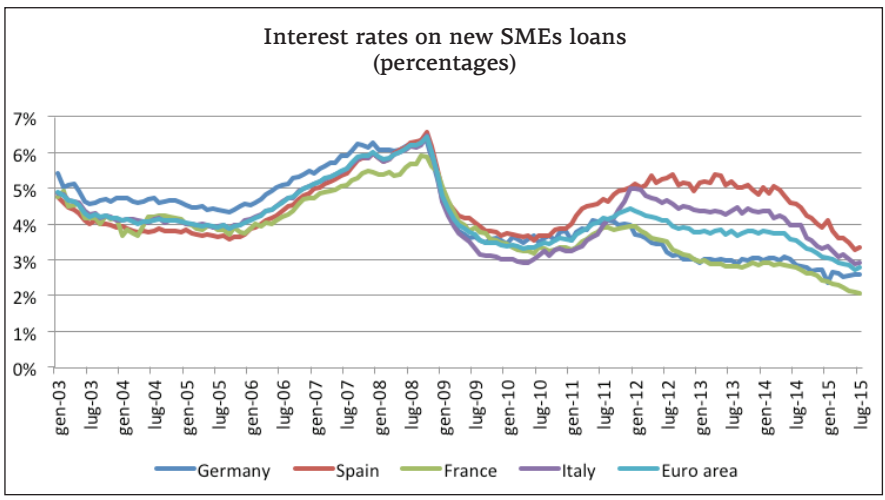
Source: ECB Statistical Data Warehouse. New loans to SMEs are defined as loans to non-financial corporations, new business, of value up to and including 1 million €. New loans to large firms are defined as loans to non-financial corporations, new business, of value over 1 million €.

Figure 6



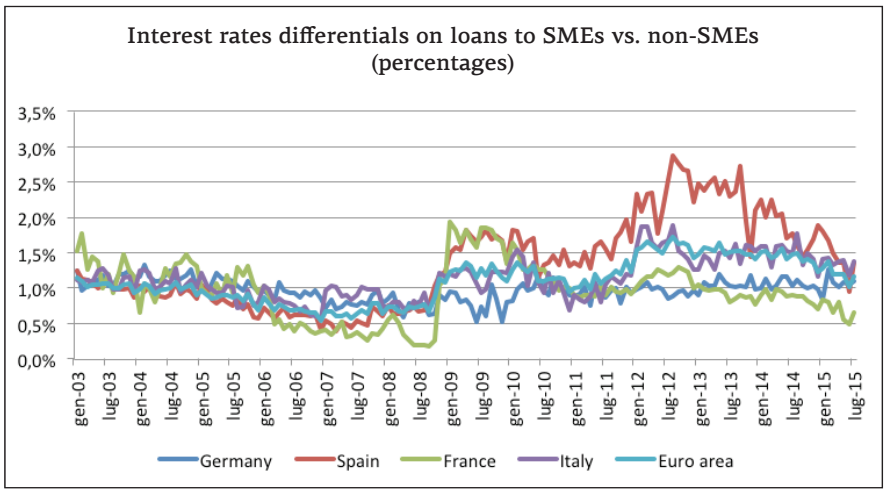
Source: *ECB Statistical Data Warehouse. 12-month moving average of the value of new loans to SMEs (new business, of value up to and including 1 million €) to total new loans to non-financial corporations.*

Figure 7



Source: *ECB Statistical Data Warehouse. Interest rates on loans up to and including 1 million €.*

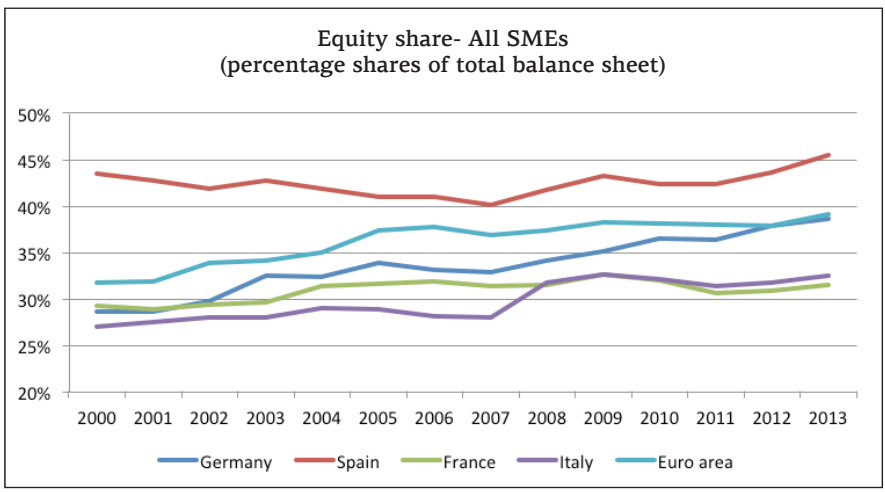
Figure 8



Source: *ECB Statistical Data Warehouse. Interest rate differential between new loans to SMEs (up to an including 1 million €) and new loans Non SMEs (loans over 1 million €). The spread is calculated as the difference between the interest rate charged to SMEs and the interest rate charged to large firms.*

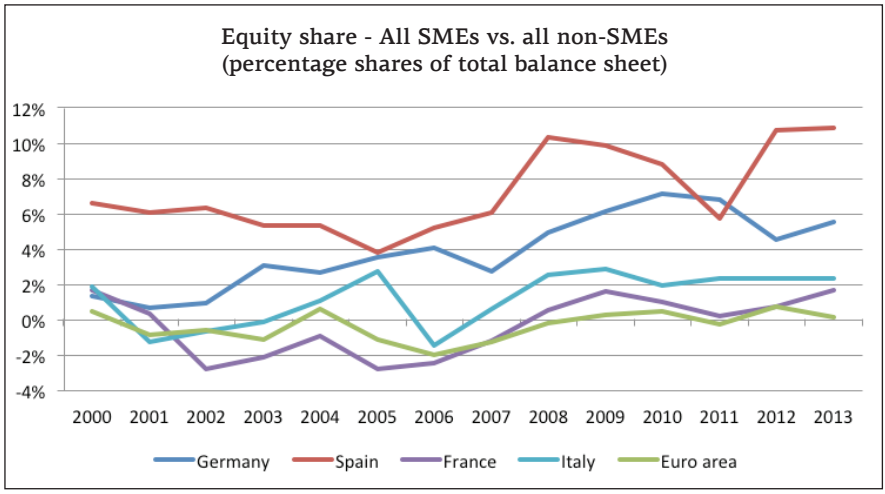
The importance of Small Business Lending for SMEs

Figure 9



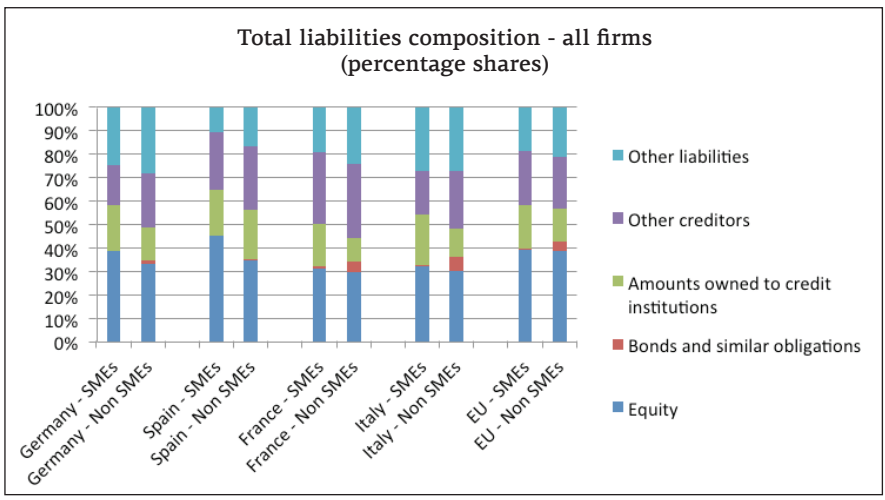
Source: *BACH Database.*

Figure 10



Source: *BACH Database. Differences between the equity shares of SMEs and non-SMEs.*

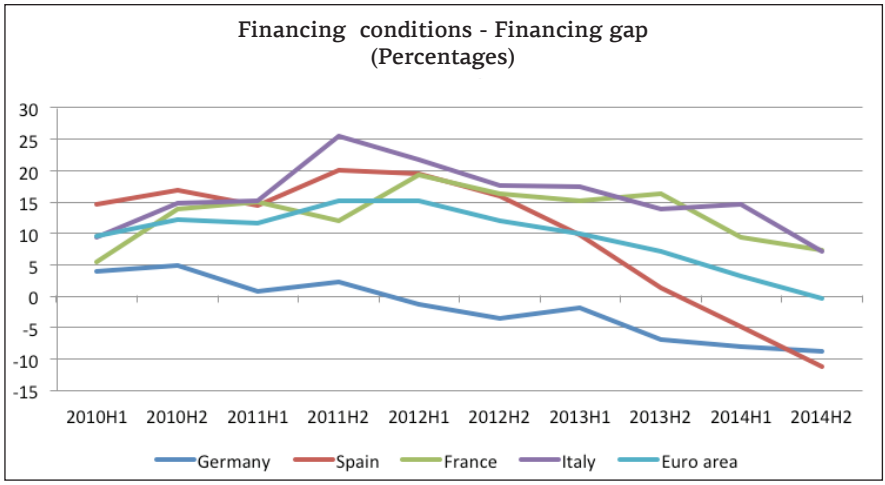
Figure 11



Source: *BACH Database. Data refer to 2103. Other liabilities include: provisions, trade payables, payments received on accounts of orders; current and deferred liabilities.*

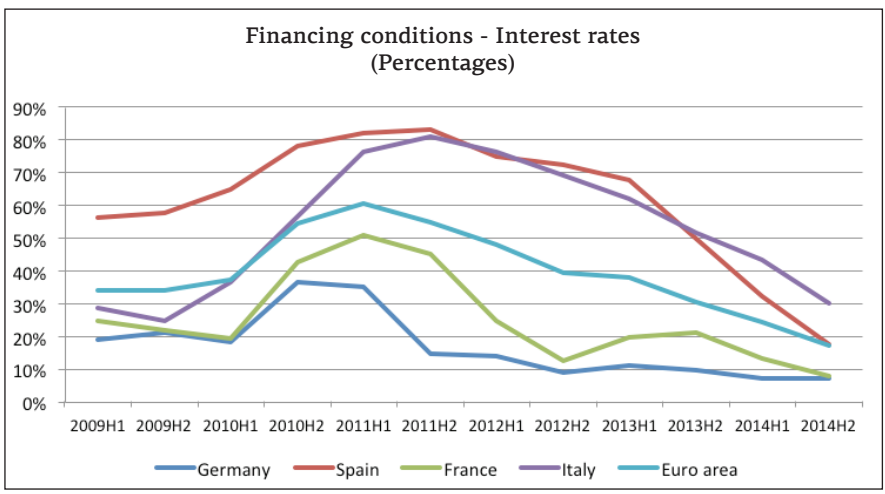
How cyclical is Small Business Lending?

Figure 12



Source: *ECB and European Commission, Survey on the Access to Finance of Enterprises in the Euro area (SAFE). Financing gap is defined as the difference between the perceived need of external financing and the actual availability of funds. Data refer to percentage differences between the number of surveyed firms that have declared that they registered an increase in the financing gap and those that declared a decrease; see Ferrando, A., Griesshaber, S., Köhler-Ulbrich, P., Perez-Duarte, S. and Schmitt, N., "Measuring the opinion of enterprises on the supply and demand of external financing in the euro area", in Proceedings of the Sixth IFC Conference on "Statistical issues and activities in a changing environment", Bank for International Settlements, Basel, 28-29 August 2012, IFC Bulletin No 36, February 2013.*

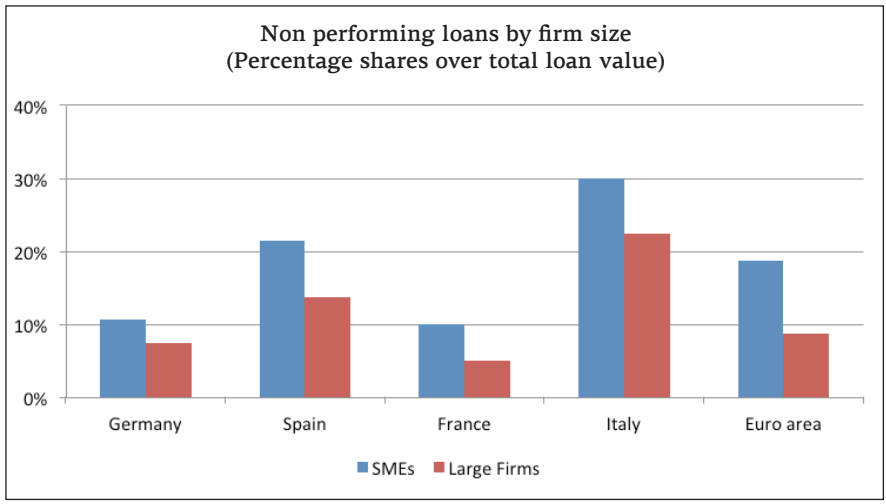
Figure 13



Source: *ECB and European Commission, Survey on the Access to Finance of Enterprises in the Euro area (SAFE). Percentage change in the number of SMEs reporting a perceived increase in the interest rate charged.*

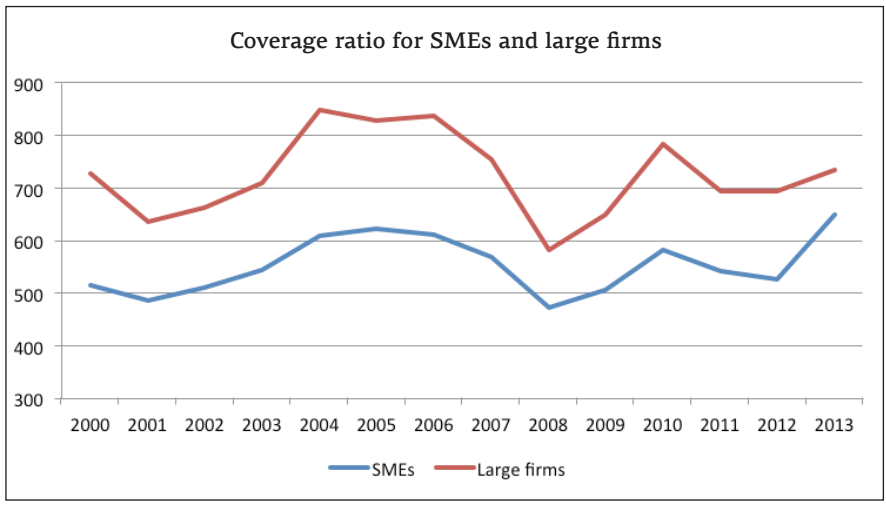
Solvency and riskiness: SMEs vs. large firms

Figure 14



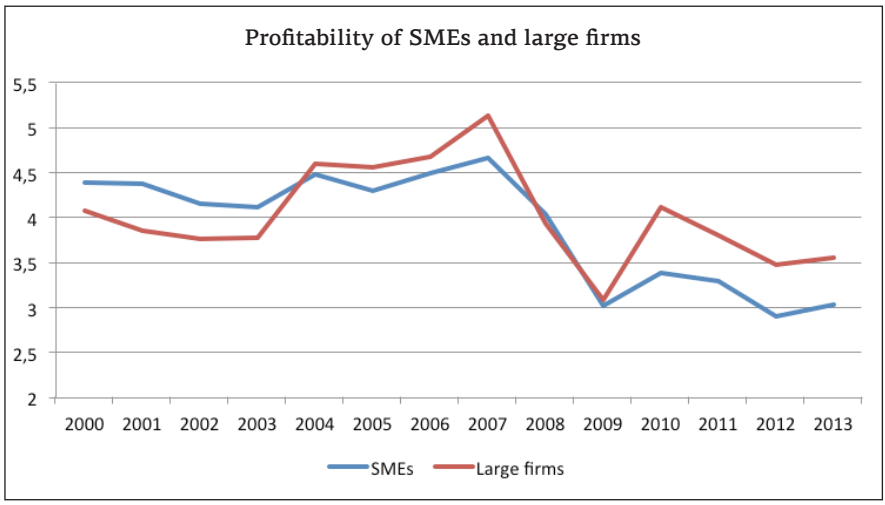
Source: *EBA, "Discussion Paper and Call for Evidence on SMEs and SME Supporting Factor", 2015-02. Data refer to end of 2014.*

Figure 15



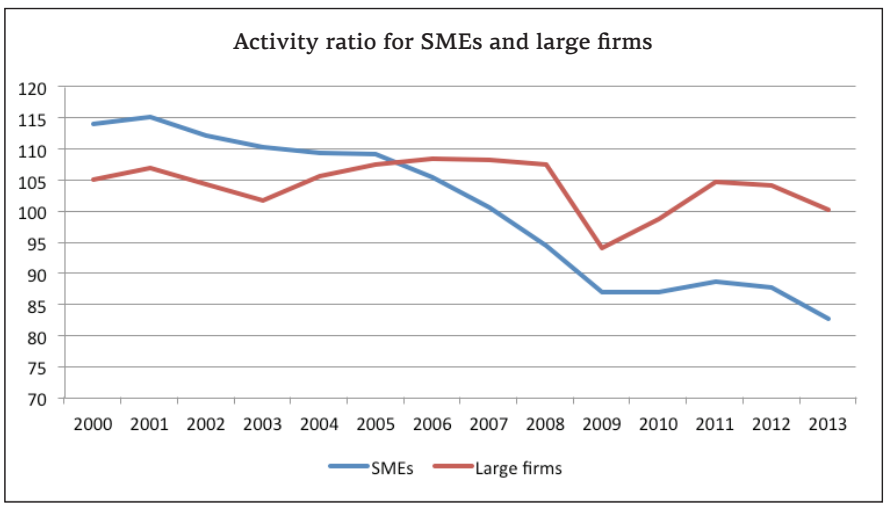
Source: *BACH Database. The coverage ratio is defined as EBITDA over total interest on financial debt.*

Figure 16



Source: BACH Database. Profitability is calculated as the ratio of net operating profits to total assets.

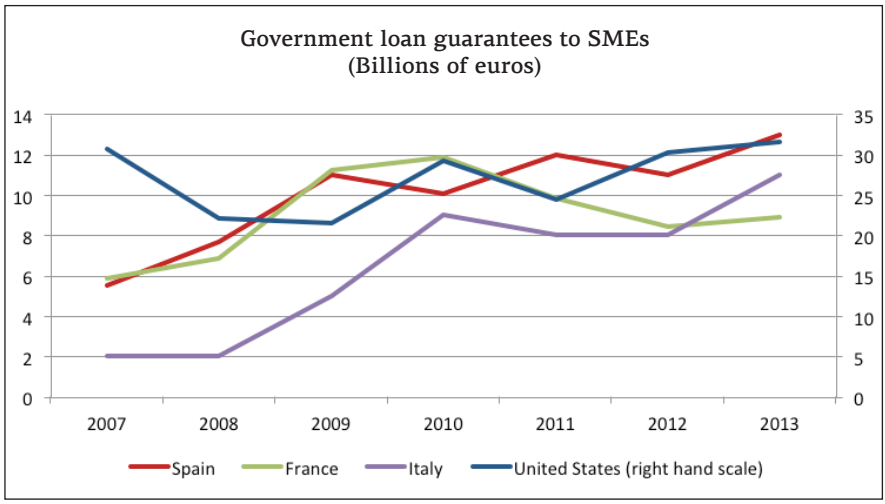
Figure 17



Source: *BACH Database. The activity ratio is defined as the ratio of net turnover to total assets*

Public guarantees

Figure 18



Source: *OECD Scoreboard - OCED Report to G20 Finance Ministers and Central Bank Governors, April 2015. According to the OECD definition, through government-guaranteed loans, the "government may provide a revenue or demand guarantee that requires the government to make up the difference if revenue or quantity demanded is below the guaranteed level. Similarly, contracts may also have exchange rate or price guarantees", and the government has "to repay any amount outstanding amount on a loan in the event of default". US amounts have been converted into € using the end of year exchange rate.*

Institutions

by Maria Teresa Trentinaglia

To provide SMEs with an adequate credit flow and access to finance, especially during the recent economic crises, European and national legislators intervened in different ways, with direct financing measures, (public or private) credit guarantees, fostering securitisation of SMEs loans, and adjustments on capital requirements related to SMEs loans.

Direct measures

Direct measures to foster SMEs lending have been promoted by national legislators and European institutions following the conclusions of the June 2013 European Council, where public intervention was urgently recommended because of the weakness and fragmentation of the European banking sector, because of the high dependence of SMEs on bank lending, and, last but not least, because of the economic role played by SMEs.

Hence, SMEs support is at the core of the 2014-2020 Multiannual Financial Framework, the Budget of the European Union. One of the target of this long-term plan is to tackle specific market failures. To this purpose, the EIB Group (EIB and EIF) and national promotional banks will use more widely certain financial instruments (loans, guarantees, equity, as well as other risk sharing instrument) to improve SMEs access to finance. Within this framework, the EIB Group has so far supported new SMEs financing operations for a total of 28.1 billion €,

as discussed by Kraemer-Eis and Revoltella (2015) in this issue. EIB Group support mainly involves intermediated debt-financing, risk-sharing instruments, as well as other capital instruments (private equity, venture capital, or growth capital). In 2015, the EIB Group, together with the European Commission, also launched the EU SME Initiative, co-funded by COSME and Horizon 2020, to encourage SMEs financing and to provide a partial risk-cover for SMEs lending to selected financial institutions. Selected financial institutions can receive an uncapped portfolio guarantee and/or a securitisation instrument in exchange for their advantageous SMEs lending, in terms of interest rates and collateral requirements. So far, the initiative has been launched in Spain and in Malta; the SMEs expected financing are, respectively, 3200 million € and 60 million €. Other specific SMEs initiative have been also undertaken at the country level: the measures in the Small Business Act package implemented by the Italian Government include, for instance, tax exemptions on R&D expenses, innovation incentives, and the extension of government guarantees on SMEs loans through the *Fondo di Garanzia per le PMI.*

European institutions also considered alternative measures to support SMEs: for instance, the Directive on Late Payments, ruling transactions with government bodies, is expected to benefit SMEs through its improved effect on cash-flows, and hence on the access to finance.

Other country level initiatives are collected and implemented under the Small Business Act for Europe. A detailed, though not exhaustive, list of these measures is available for 2014.[8]

Credit guarantees

As stressed by Kraemer-Eis et al. (2015) in the EIF European Small Business Finance Outlook, a careful analysis at government intervention suggests that, when dealing with SMEs access to finance and addressing market failures, SMEs guarantees are the most widely used policy instrument, as displayed in Figure 18 in the Number section. Through Credit Guarantee Schemes (CGS), governments offer partial protection on SMEs exposure, working, *de facto*, as a

8. Database of SBA policy measures.

substitute for the collateral requirements often imposed by banks unwilling to provide loans to SMEs. The mutual, public, and private institutions ultimately providing this form of credit protection are gathered under the European Association of Guarantee Institutions: its 41 institutions, in 20 countries, account for almost all the SMEs guarantee activity.

SME securitisation

There is a general consensus on the importance of creating and developing a SMEs dedicated securitisation market. Institutional representatives have stressed the need for developing such a market. In his speech in 2014,[9] Yves Mersch, member of the ECB Executive Board, states that a well-developed SMEs securitisation market may indeed benefit the match between capital demand and capital supply, and that all the implemented safeguard measures[10] proved to be efficient in determining a contained default rate since the onset of the financial crises.[11] To this purpose, he suggests to "distinguish securitisation instruments in several categories, and assigning preferential treatment only to instruments meeting the strictest requirements", but the most suitable criteria and the treatment still need to be formally identified.

The development of a Capital Union Market may ease fund raising, and it may also develop the SMEs securitisation market. According to Jonathan Hill, Commissioner for Financial Stability, Financial Services, and Capital Markets Unions,[12] the ECB, together with the Bank of England, is working on plan to revitalize the securitisation market, and the proposed securitisation instruments are "simple, transparent and standardised". The Action Plan on Building a Capital Market Union, released in September 2015, suggests a series of intervention to support SMEs seeking access to finance. The main pillars of this intervention mainly target the reduction of information barriers that impede SMEs from identifying investment opportunities. These two messages are just an example of the intensity of this debate.

9. Overcoming the current challenges faced by small firms, Deutsche Boerse – Clearstream 'Exchange of Ideas' event, London, 7 April 2014.
10. Such as in increased transparency, following the introduction of the loan-by-loan reporting requirement.
11. The average default rate from 2007/2008 ranged between 0.6-1.5%, against the 9.3-18.4% US average.
12. http://europa.eu/rapid/press-release_SPEECH-15-5290_en.htm

In an attempt to revitalize the Asset-Backed-Securities (ABS) market, the ECB imposed loan-by-loan disclosure requirements also on SMEs ABS. By providing more detailed and accessible information to market participants, the ECB aims at improving ABS transparency and to facilitate the risk assessment of these instruments, used as a collateral in the Eurosystem credit operations. This new, and more prudent, information requirements were introduced at the beginning of 2013 to reduce asymmetric information and to increase transparency. Still, as stressed by both the ECB and the Bank of England, SMEs ABS account only for 8% of the overall outstanding ABS amount. These institutions jointly worked in this direction: the joint ECB and Bank of England document recalls the Risk Retention Rule in 2011, measures to increase the transparency of the securitisation structures, and the EU Credit Rating Agency legislation in 2013. The loan-by-loan principle has also been implemented at the country level, with the introduction of loan-level data in all ABS classes.

Also the EIB Group introduced a specific scheme to revitalize the SMEs ABS market: ABS Credit Enhancement Initiative aims at providing guarantees on SMEs securitisation, by offering credit enhancement for senior and mezzanine tranches of securities backed by SMEs loans. Still, much has still to be done, and the main issues relate to the regulatory treatment, to the reliance on credit rating agencies, on the transparency of information.

The development of a sound securitisation market reflects the need to diversify available financial instruments, such as markets for external equity, and venture capital. In addition to these solutions, member states proposed alternative measures to facilitate SMEs access to the securitization market and to encourage the issuance of securities by SMEs:

- The Initial bonds offering market in France, where listed and unlisted SMEs can issue bonds to retail investors;
- The Bond – M (mid-cap bond segment) in Germany, where companies can get finance directly from institutional investors;
- In Italy, specific SMEs-oriented measures, providing a more favorable stock market listing and an enhanced capitalization and including the development of the Minibond Market, where unlisted, mid-sized SMEs and small mid-caps can issue short-medium term ordinary and convertible bonds, are part of the banking industry reform (that is, for instance, transforming large cooperative banks into joint stock companies and lay-

ing out NPLs management rules, and introducing new tax provisions on loan losses);
- The Bond Market for Small Businesses in Spain, to set a corporate bond exchange for small and mid-sized companies;
- The Funding for Lending Scheme in the UK, to the reduce the cost of bank funding in exchange for lending commitments.

Still, these initiatives have been only recently implemented, and the volumes achieved so far are not very significant.

Capital requirements

Capital requirements for banks have been discussed in the first issue of European Economy, that focused on capital regulation from the point of view of the financial stability vs. economic recovery trade-off.

The Recital 44 of the CRR Directive introduces a SMEs supporting factor to reduce the total risk weighted exposure of SMEs lending. This capital discount, implemented in January 2014 and subject to a potential revision in 2016, aims at reducing capital requirements for banks active in SMEs lending, that should in turn use the consequent capital relief to provide credit flows to this specific counterpart category. More specifically, this factor applies a 0.7619 discount factor to the exposure to those SMEs, classified either as retail or corporate, that satisfy the 2003 European Commission definition,[13] and with a total exposure to the credit institution lower than 1.5 million €.

The EBA Discussion Paper, published in June 2015, launches a call for evidence to assess the effectiveness of the supporting factor. The reported preliminary evidence shows that EBA's reporting banks increased their CET1 ratios by 0.19% on average in 2014Q4. In terms of capital saving, this increase generated a 10.5 billion € capital relief for EBA's reporting banks, although the distribution across countries displayed strong heterogeneity, because of the different exposure to SMEs.[14]

The Basel Committee on Banking Supervision has recently issues a consultative document on a revisions to the standardised approach for credit risk. In

13. Turnover up to 50 million €.
14. More than 50% of this freed up in capital can be traced back to Italy, France, and Spain.

particular the Committee is investigating the suitability of substituting external ratings with a some measures of risk drivers that should be simple to use, intuitive, readily available and capable of explaining risk consistently across jurisdictions. It is indeed a challenging revision that will significantly affect the attitude towards lending to SMEs, as forcefully indicated in the comments received by the consultation.[15]

As stressed in the Study for the ECON Committee by Ayadi et al. (2015), this discount factor may be complemented by other efforts. After the recent financial crises in fact, national governments often had to provide financial support and State aid to banks that suffered significant losses because of their extremely risk-taking portfolio composition. The principles and guidelines for State aid intervention in the banking sector are contained in the 2013 Banking Communication of the European Commission, that replaces the temporary Banking Package released in 2008. This institutional package defines the conditions for granting State aid to the banking sector and identifies four alternative intervention measures: bank recapitalisation, asset relief, guarantees on bank liabilities, and liquidity measures.[16] On top of targeting financial stability, this memorandum explicitly addresses the issue of SMEs lending, so as to avoid any potential disruption in the funding flow. In addition to the imposed below-market remuneration, the ailed bank must also comply with restructuring plans, which generally range from selling certain activities to merging with more sound credit institutions. Still, in certain cases, the ailed bank must commit, or promise to commit, to satisfy certain lending SMEs targets. As discussed in Ayadi (2015) and in Ayadi et al. (2015), being active in Small Business Lending positively contributed to the State aid granting process. In 2009, for instance, BPCE, resulting from the imposed merger between the groups Caisse d'Épargne and Banque Populaire, had to comply with specific SMEs, individuals, and local authorities lending targets: its lending volumes had to increase by 3 to 4% per year. Until 2012, the group fulfilled the lending requirements, but failed to do so in 2012, in line with market trends. Ayadi (2015) and Ayadi et al. (2015) discusses the impact on SMEs lending, as well as the feasibility, of imposing a conditionality clause in granting State aids.

15. Annex 1 of the Consultative Document includes the proposals for exposure class: paragraph 22, page 33, reports the proposed weights for senior corporate exposure, and paragraph 33, page 35, contains those for retail lending.
16. See Ayadi (2015) in this journal for a complete overview of the institutional background.

A bird eye (re)view of key readings

by Maria Teresa Trentinaglia

This section of the journal indicates a few and briefly commented references that a non-expert reader may want to cover to obtain a first informed and broad view of the theme discussed in the current issue. These references are meant to possibly provide an extensive, though not exhaustive, insight into the main issues of the debate. More detailed and specific references are available in each article published in the current issue.

On Small Business Lending and Lending Technologies

Small firms are more "informationally opaque" than larger ones and, for this reason, they are more dependent on external capital provided by financial intermediaries such as banks, that are better able to produce information (Berger and Udell, 1998; Berger et al., 2005). The role of market failure related to informational issue with SMEs is addressed also in the Editorial of this Issue.

The financial intermediation industry has proposed a large number of possible solutions to reduce the information gap problem. An extensive line of research has investigated SMEs lending technologies (Berger and Udell, 2006; Berger, 2012; Udell, this issue), distinguishing between relationship banking, based on the collection of qualitative, or soft, information, and transaction banking, in which quantitative, or hard, data are collected and are frequently used to create a credit scoring.

Relationship lending generates long lasting and robust firm-bank relations, with positive effects on credit availability (Petersen and Rajan, 1994; Petersen and Rajan, 1995; Berger and Udell, 1995; Cole, 1998; Elsas and Krahnen, 1998; Harhoff and Korting, 1998; and Machauer and Weber, 2000). However, while strong and long lasting lending relationships can help reducing the information gap, this may lead to the so called hold-up problem, with banks extracting rents from small firms (Sharpe, 1990; Rajan, 1992; Petersen and Rajan, 1995). Indeed, a large strand of literature has analysed the role of bank lending relationships studying the effect of mergers and acquisitions (M&As), when large part of the soft information is lost, identifying a negative impact of M&As on lending to SMEs (Berger et al., 1995 and 1998; Keeton, 1995; Strahan and Weston, 1996; Peek and Rosengren, 1998; Focarelli et al., 2003).

A strongly related strand of literature has studied the comparative advantages of small and large banks in dealing with hard and soft information. The main prediction is that larger banks tend to have a comparative advantage in elaborating hard information, mainly because of the scale economies stemming from data collection and transmission and because of their more complicated managerial structure (Stein, 2002). Smaller banks, instead, with the leaner organization, are more capable of processing qualitative, and soft, information (Berger and Udell, 2002; Berger et al., 2005). Similar conclusions characterize the comparison of single vs. multimarket banks, and domestic vs. foreign banks. Single market banks tend to be concentrated in a limited area, and their knowledge of the local market allows them to have a comparative advantage in soft information (Degryse and Ongena, 2005; and DeYoung, Hunter and Udell, 2004). In a similar vein, foreign-owned banks are more skilled at dealing with hard information, and domestic banks tend to be more specialized in soft information lending (Detragiache et al., 2008).

The effect of transaction technologies on lending to SMEs is ambiguous. The adoption of credit scoring rules, for example, reduces the cost of collecting and processing information, therefore increasing credit supply (Frame, Srinivasan, and Woosley, 2001; Frame et al., 2004; Berger et al., 2005). However, excessively strict rules may hinder the flexibility of loan officers, and indeed some evidence shows that banks using more discretion in the application process are less likely to turn down potential borrowers (Berger et al., 2005).

The information gap problem is even more detrimental to younger firms, that had less or no time to build lending relationships, and therefore are even more likely to suffer a shortage of bank loans and the lack of alternative funding sources (Berger et al. 2005, 2014, Uchida et al. 2012, Beck et al. 2006, Petersen and Rajan 1997, Berger and Udell 2002, 2006.). For these firms, angel financing and venture capital are therefore among the most common alternatives to bank financing (Berger and Udell 2002).

On financial crises, banking lending, and the real economy

There is a wide consensus that economic crises tend to reduce bank lending, with a negative impact on the real economy. The information gap problem is more acute during economic downturns and financial crises (DeYoung, 2015 and this Issue), and indeed Iyer et al. (2010) and Mach and Wolken (2012) show that small, and younger, firms tend to be more credit constrained than larger, and older, firms during a credit crunch. However, also during a banking crisis, lending relationships can alleviate problems of credit constraints (Horiuchi and Shimuzu, 1998; Watanabe, 2006; Park et al. , 2007; Jiangli et al., 2008) and can help the recovery process of rescued firms (Dahiya, et al., 2003; Herrera and Minetti, 2007; and Rosenfeld, 2007). Beck et al. 2015 find that more relationship banks in the vicinity of a firm is associated with fewer firms being credit constrained in a crisis but not during the credit boom.

On credit guarantees

Gozzi and Schmukler (2015) in this Issue give a thorough treatment of public credit guarantee to SMEs discussing first the possible rationales for this public intervention and providing an overview of the existing public programs their differences and associated assessments.

The variety of these programs around the world is described in details in Beck et al. (2010) and the general principles are discussed in Honohan (2010). As Gozzi and Schmukler in this Issue emphasize, the difficulty in assessing

public programs on credit guarantees can be a daunting task and is in fact rarely performed convincingly.

OECD (2010) provides a general framework for assessment of government support programs for SMEs. The EU Commission report (2005) provides an overview of the best practices for private and public guarantees as a way of improving access to finance for SMEs.

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Leading Articles

Issues in SME Access to Finance

by Gregory F. Udell [17]

Abstract

This article examines a number of the most important issues surrounding SME access to finance in a European context. It does this through the lens of the lending channel paradigm first introduced in Taketa and Udell (2007). Using this analytical framework the article examines the impact on SME access to finance from: the introduction of Basel III, government guarantee schemes, SME securitization, and the spread within Europe of venture capital and crowd funding. Special note is given to policy implications and cross country differences within Europe.

1. Bank regulation reform and SME financing: The potential impact of Basel III

There is considerable policy concern and controversy about whether new regulations such as those in Basel III could have a negative effect on SME access to finance. Addressing these questions is a natural follow-on to the contributions in the first issue of *European Economy – Banks, Regulation, and the Real Sector* on "Capital Requirements for Large Banks". The lead article in that issue highlights the tension between regulatory changes instituted after the beginning of the crisis (to decrease bank leverage and increase capital buffers) and the

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banking industry's contention that this will reduce the incentive to lend (Barba Navaretti, Calzolari and Pozzolo 2015). In a world in which the relevance of a bank's capital structure is still in debate, it is not surprising that the effect of *changes* in a bank's capital structure is, likewise, in debate. As Barba Navaretti, Calzolari and Pozzolo (2015) emphasize, in the Modigliani and Miller version of the banking world reflected in Admati and Hellwig (2013), bank capital structure is irrelevant and meeting the new regulatory requirements should not be problematic for banks. But, as other contributors to the journal's first issue (Beck 2015, Clerc 2015 and Rochet 2015) point out, market frictions likely punch a significant hole in the bank capital irrelevance argument and, thus, the stringent new banking regulations could have a meaningful effect on bank lending.

I refer the reader to these articles in the first issue of the journal for a detailed discussion of the arguments and evidence that the overall cost of lending will likely increase and credit availability will likely contract because of these new regulations. To summarize, however, Beck (2015) concludes that a majority of the research suggests only a modest effect on the cost of funding and on investment and aggregate output. But, Clerc (2015) also notes that some recent papers show that the short and long term costs of higher capital requirements would be higher than those estimated in the MAG exercise and that there may be an optimal requirement with respect to their effect on real economic activity.

These studies, however, are predictive in nature. A very recent study on the Swiss implementation of the countercyclical capital buffer offers the first assessment of the *actual* implementation of Basel III – specifically, the implementation in Switzerland of one component of Basel III, the countercyclical capital buffer (CCB) (Basten and Koch 2015). Switzerland was the first country to adopt the Basel III countercyclical capital buffer (CCB) by implementing it in February of 2013. This paper uses a unique loan level dataset on loan offers to analyse the impact of the CCB on mortgage pricing. One of the most interesting results in this paper is that the effect of the implementation of the CCB on mortgage offer rates was higher (on average 2.72 bp) for capital-constrained banks. This result suggests that the impact of new capital requirements on a given bank will depend on its initial capital condition. Thus, banks that are still recovering from the effects of the financial crisis might constrain their SME lending more than banks that are not.

Let's now focus specifically on how the new regulations might affect *SME* finance. Several papers have attempted to empirically quantitative the future

impact of Basel III on SMEs using pre-implementation data. (For a nice review of the impact of Basel II on SME access to finance, see Cardone-Riportella et al. 2011.) Based on French SME micro data Humbolot (2014) finds that Basel III will likely have some effect on SME access to finance. But, the effect will depend on the regulatory treatment of the loan (e.g., whether the bank uses the Standardized or IRB approach and whether it categorizes the loan as corporate or retail) and the risk-return profile of the loan category. Using micro loan data on Spanish SMEs Cardone-Riportella et al. (2011) calculate credit risk premiums under Basel III. While for some categories they find only modest increases in the credit risk premiums (e.g., small firms in the highest rating category and SMEs guaranteed by loan guarantee associations), for other categories they find higher credit risk premiums (e.g., low rated corporates). The incremental increase in the credit risk for Basel III over Basel II, however, is found to be generally quite modest for all categories of SME loans.

What other factors are likely to determine the overall impact of the new requirements on SME access to finance? In order to answer this question, it is helpful to put SME finance into a broader context. I find that the *lending channel paradigm* is quite useful in that regard. This paradigm was first introduced in Taketa and Udell (2007) and subsequently updated in Udell (2009) and Udell (2015). The lending channel paradigm combines the concept of lending technologies (e.g., Berger and Udell 2006) with the type of institution that offers the technology. The universe of lending technologies includes relationship lending, financial statement lending, asset-based lending (aka discounting in Ireland and the U.K.), factoring, equipment lending, leasing, real estate-based lending, small business credit scoring, crowd funding and trade credit (see Figure 1). Each of these lending technologies represents a "unique combination of the primary source of information, screening and underwriting policies/procedures, structure of the loan contracts, and monitoring strategies and mechanisms" (Berger and Udell 2006). These lending technologies are either "relationship-based" or "transactions-based". We can also think of them as being either primarily targeted to relatively opaque SMEs, relatively transparent SMEs, or both. For example, relationship lending would be targeted to relatively opaque SMEs, while financial statement lending (which requires verified/audited financial statements) would be targeted to relatively transparent SMEs. And, we can think of them in terms of the primary source of information on which they are based, i.e., "soft" information vs.

"hard" information. Unlike hard information, soft information is not easily quantifiable and transmitted within the hierarchy of a financial institution (Stein 2002).

The lending channel paradigm builds on the concept of lending technologies by linking each of the technologies to the *type of institution that offers them within a given country.* Each combination represents a "lending channel" through which funds can flow to SMEs within a given country. Let's use the U.S. as an example because it is a country in which all of these lending technologies exist. Figure 2 shows U.S. lending channels today. The columns represent the institutions in the U.S. that provide financing to SMEs. The rows indicate the lending technologies. The cells (i.e., the channels) link the lenders with the technologies they offer: an "o" indicates an operative lending channel and the grey shaded boxes indicate that this type of financial institution does not offer that lending technology. For example, large banks and commercial finance companies do not offer relationship lending but small banks and credit unions (and credit cooperatives in many European countries) do. The special role of smaller depository institutions in providing relationship lending is supported by the bulk of the theoretical and empirical evidence (e.g., Stein 2002, Berger et al. 2005). However, the evidence also shows that large banks are very active in providing *transactions-based* lending to SMEs (e.g., de la Torre, Peria and Schmukler 2010). And, this is reflected by the large number cells linking large financial institutions to transactions-based lending technologies.

Figure 1 – Lending Technologies

Technology	Type	Borrower	Information
Relationship Lending	Relationship	Opaque	Soft
Financial Statement Lending	Transaction	Transparent	Hard
Asset-Based Lending/discounting	Transaction	Opaque	Hard
Factoring	Transaction	Opaque	Hard
Equipment Lending	Transaction	Opaque and Transparent	Hard
Leasing	Transaction	Opaque and Transparent	Hard
Real Estate-Based Lending	Transaction	Opaque and Transparent	Hard
Small Bus. Credit Scoring	Transaction	Opaque and Transparent	Hard
Crowd Funding	Transaction	Opaque	Hard
Trade Credit	Transaction/ Relationship	Opaque and Transparent	Soft and Hard

Figure 2 – U.S. SME Lending Channels (2015)

Technology	Large Banks	Small Banks	Credit Unions	Large Commercial Finance Companies	Small Commercial Finance Companies	Internet	Corporations
Relationship Lending		o	o				
Financial Statement Lending	o	o	o				
Asset-Based Lending/discounting	o	o		o	o		
Factoring	o	o		o	o		
Equipment Lending	o	o	o	o	o		
Leasing	o	o	o	o	o		
Real Estate-Based Lending	o	o	o				
Small Bus. Credit Scoring	o						
Crowd Funding						o	
Trade Credit							o

Now we can see how the lending channel paradigm is a useful tool in thinking about shocks to a financial system – including a regulatory shock such as Basel III. Basel III could very well contract some of these lending channels. Specifically, Basel III could affect the lending channels in Europe that are provided by banks. But, non-bank channels should not be negatively affected. Moreover, some of these nonbank channels may actually expand in response to SMEs seeking alternative sources of funding. For example, large corporations might increase their provision of trade credit to affected SMEs. (There is some evidence that increases in trade credit may have partially offset the effects of another type of shock, the credit crunch in Europe and the U.S. during the recent crisis (Garcia-Appendini and Montoriol-Garriga 2013, Carbó-Valverde, Rodríguez-Fernández and Udell 2014). Or, commercial finance companies might increase their lending/factoring to European SMEs. To the extent that nonbank channels offset a negative Basel III effect on bank channels, then Basel III's impact will be at least partially mitigated.

This leads us to another useful feature of the lending channel paradigm. It highlights the fact that the lending channels differ significantly across coun-

tries (and across time). For example, Central and Eastern European banking systems are dominated by foreign multi-nationals. So, the lending channel paradigm can be adjusted to reflect a distinction between domestically-owned banks and foreign-owned banks. For example, if we were to construct a lending channel diagram for Croatia, it might look like Figure 3. How these multi-national banks behave in their foreign lending in response to Basel III will likely depend on whether they are capital constrained and whether they behave differently "away from home" (Ongena, Popov and Udell 2013). Another example is asset-based lending which exists in Ireland and the U.K. but does not yet exist in continental Europe. Non-bank asset-based lenders may mitigate a Basel III effect on SME finance in these two countries. Also, because the economic importance of crowd funding likely varies significantly across Europe, its potential to mitigate Basel III effects will be different depending on the country.

In short, concern over the effect of Basel III is not without some justification. I would argue that the lending channel paradigm offers a useful way of framing the issue. At the country level it highlights the fact that the ultimate effect will depend on how the individual lending channels behave. It also highlights the importance of the net effect – the extent to which the contraction of some channels may be offset by the expansion of others. And, finally, it emphasizes that there may be important differences across countries that determine the net effect between contracting and expanding channels.

Figure 3 – Croatian SME Lending Channels (2015)

Technology	Small Banks	Foreign Banks	Com. Fin. Cos.	Corporations
Relationship Lending	o	o		
Financial Statement Lending	o	o		
Factoring	o	o	o	
Leasing	o	o	o	
Real Estate-Based	o	o		
Trade Credit				o

2. The public sector and SME financing: The impact of guarantee schemes on the SME "funding gap"

This is an important question because SME loan guarantee programs are globally ubiquitous and countries have invested significantly in them (e.g., Cressy 2000, 2002). Unfortunately, it is my sense that academic research on the effectiveness of these programs has not matched their policy importance. In thinking about this issue, the lending channel paradigm can again be useful. Loan guarantee programs can be thought of as one of two *credit multipliers.* A credit multiplier has the potential to expand the economic power of one or more lending channels. That is, a credit multiplier can potentially increase the flow of funding through a lending channel. (The other credit multiplier is SME loan securitization which we will turn to next.)

It is widely agreed that these guarantee programs are designed to: 1) address market imperfections that can lead to a funding gap; and 2) spur innovation in the SME sector – the sector where innovation matters the most (e.g., Hancock, Peek and Wilcox 2007). Unsettled in the academic literature is whether the programs are on balance welfare improving, or welfare diminishing. They might actually be diminishing because of unintended consequences associated with engendering adverse selection and moral hazard problems. Some research, indeed, indicates that the problems created by guarantee programs are greater than the problems that they are intended to solve and that credit allocation should therefore be left to the market (De Marco 2002). However, it is my sense that the balance of the literature argues in favour of these programs. That is, guarantee programs appear to generate positive net benefits including increased real economic activity (e.g., Craig, Jackson and Thomson 2005, Hancock, Peek and Wilcox 2007), decreased pro-cyclicality of SME lending (e.g., Hancock, Peek and Wilcox 2007) and mitigation of the effects of macro shocks (e.g., Uesugi, Sakai and Yamashiro 2006, Wilcox and Yasuda 2010).

3. Securitization of SME loans: Can securitization improve SME access to finance?

In the context of the lending channel paradigm, securitization is the other key credit multiplier. Securitization's birth occurred with the first mortgage backed security (MBS), the GNMA pass-through, offered in 1968. After its introduction

securitization of residential mortgages expanded rapidly ultimately culminating in subprime MBS. Securitization spread to other instruments including, for example, commercial real estate mortgages, auto loans, accounts receivable, and music industry royalties. Not surprisingly, there has been considerable interest in securitizing commercial loans - particularly SME loans - that can be traced back at least three decades. Moreover, policy interest in securitizing SME loans has been particularly strong in Europe recently. Policymakers point to a number of benefits: a useful bank funding tool; an alternative to bank funding; bank portfolio diversification; liquidity; and, macro-prudential benefits from transferring risk away from the banking sector (e.g., BoE-ECB 2014). Moreover European policymakers have been proactive in expanding the SME securitization market including the November 2014 ECB introduction of the Asset-backed Securities Purchase Program (ECB 2014).

Today SME securitization in Europe represents about 10% of total SME outstandings – a percentage much larger than in the U.S. (Altomonte and Bussoli 2014). However, there is considerable variation across countries. Also, there has been a significant decline in the volume of SME asset-backed security (ABS) issuance since the crisis and the secondary market has been moribund. Perhaps more telling, however, is the fact that nearly all (90%) of the current SME ABS are retained on the balance sheets of the issuing banks (i.e., it does not trade) (Altomonte and Bussoli 2014) and where it can be posted as collateral with the central bank. The current European situation raises interesting questions: What is the extent to which the European SME ABS market emerged endogenously as a private market? Would the SME securitization market have been as large in the absence of government support programs in big issuers like Spain? And, can all types of SME loans (e.g., all lending technologies) be securitized? Or, will SME securitization be limited to amortizing loans secured by tangible assets (e.g., equipment, real estate)?

If we look to the U.S. experience, the answers to these questions are not encouraging. Despite much enthusiasm, particularly in the 1980s, securitization of SME loans in the U.S. has been quite limited. Specifically, SME loan securitization in the U.S. is virtually entirely limited to the federal government's Small Business Administration (SBA) loans, particularly the SBA's 7(a) guarantee program (Berger and Frame 2005). In other words, the attractiveness of SME loans as a securitizable class of assets appears to be substantially (if not solely) due

to the government guarantee associated with the underlying asset and to the standardization of these loans by SBA policy (Wilcox 2011). However, "indirect" securitization may be far more economically significant. Indirect securitization involves the securitization of a loan on an asset owned by the entrepreneur such as a residential mortgage or credit card receivable where the proceeds from these loans are used by the entrepreneur to provide financing for her business. A lack of data make it difficult to estimate the importance of indirect SME securitization in the U.S., but one estimate puts it at as high as 20% of SME debt in the U.S. (Wilcox 2011).

All things considered, the European and U.S. experience suggests that a healthy scepticism about the upside of direct SME securitization as a significant credit multiplier and a solution to the SME funding gap may be in order. Many SME loans are tailored financial contracts requiring extensive monitoring and renegotiation flexibility. Thus, it may be too difficult to securitize relationship loans, more complex SME loans that are used for working capital purposes (i.e., lines of credit and overdraft facilities), or longer term loans that are covenant rich and require extensive monitoring. But, it may be feasible to securitize smaller loans that are generic in nature, benefit little from monitoring, collateralized by tangible assets and are amortizing. More fundamentally, the limited success of SME loan securitization to date may reflect a natural tension between intermediated finance and market-based finance. The theory of financial intermediation suggests a special role for banks and other financial intermediaries in providing finance to opaque SMEs. It may turn out that the type of SME securitization that we ultimately observe in Europe and the U.S. is the exception that proves the rule: only the smallest, most generic and the most standardized transactions-based loans ultimately get successfully securitized. Time will tell in Europe.

4. Alternatives to bank financing of SMEs

Perhaps the two most interesting alternatives to bank financing are venture capital and crowd funding. Turning first to venture capital it is important to note that the venture capital market is very much an intermediated market. Consistent with the theory of financial intermediation, venture capitalists act

as delegated monitors by extending equity finance to opaque start-up firms. In doing so they intensively screen prospective portfolio firms, they design complex tailored contracts at origination and then they intensively monitor these firms until they harvest them (i.e., the exit their investment via an IPO, and M&A or a write-off). Arguably the level of intensity of these activities is even higher than in banking. So, when venture capitalists fail to monitor effectively, the market disciplines them (Tian, Udell and Yu 2015) just like the banking market disciplines banks who fail to monitor (Dahiya, Saunders, and Srinivasan 2003).

There has been a considerable amount of discussion about the future of venture capital in continental Europe and why it remains relatively nascent and has less of a technology orientation than the U.S. In that regard, it is important to note that the rapid growth of the venture capital industry in the U.S. was facilitated by an interesting confluence of conditions that existed at the time of its birth in the 1980s. First, the U.S. had large reservoirs of capital in the form of private (and public) pension funds and endowments. Second, changes in the early 1980s in the law that defined "prudent" investing for a fiduciary (i.e., the prudent man rule) permitted these institutions to invest in venture capital funds for the first time. And, third NASDAQ emerged as a technology oriented market that provided an important vehicle for venture capital exit. The demand side for venture capital (i.e., the level of entrepreneurship) is also important and may differ significantly between Europe and the U.S. Interestingly, there are significant differences in VC activity across Europe. A small academic literature has analysed cross-country determinants of these differences. One recent study finds that the exit environment - particularly the strength of the M&A market – is quite important. This is interesting because in general the relative importance of the M&A exit versus the IPO exit is much greater in Europe than in the U.S. (Felix, Pires and Gulamhussen 2013).

To the extent that the European venture capital industry is migrating toward a U.S. model, a cautionary note may be in order. Some observers believe that the U.S. venture capital model is "broken". I am specifically referring to the intermediation model where venture capital is extruded through a venture capital fund set up as a limited partnership. Under this partnership arrangement the capital gains are split between the general partners (the VCs who manage the fund) and the limited partners (who fund the partnership): the general partners get 20% of

the capital gains and the limited partners get 80%. One recent study has found that VC returns (i.e., returns to the limited partners that provide the funding) haven't significantly outperformed the market since the 1990s (Mulcahy, Weeks and Bradley 2012).

Now turning to crowd funding: this new transactions-based technology was introduced about 10 years ago. It can take the form of debt or equity. Equity crowdfunding received a big boost in the U.S. with the passage of the JOBS Act after the financial crisis that allowed for wider investor participation. Crowdfunding platforms allow entrepreneurs to fund their enterprises via the internet tapping small individual investors. While the growth of crowdfunding has been rapid, it is still too early to tell whether this technology will ultimately be economically comparable to traditional forms of debt and equity SME financing such as bank loans, venture capital or angel finance. While there have been a few academic studies on some aspects of crowdfunding (e.g., studies of lending biases (Ravina 2008, Pope and Sydnor 2011) and the presence of default information in excess of the hard information associated with the listing (Iyer et al. 2009)), more research is certainly needed.

The biggest unanswered question in my mind is the issue of how to reconcile crowd funding with the information-based theory of financial intermediation. As I noted earlier, this theory argues that intermediaries like banks and venture capital funds are economically important because they act as delegated monitors in providing funding to opaque SMEs. Crowdfunding, however, is based on the premise that intermediaries are unnecessary – that is, crowdfunding is a form of disintermediation. One possible reconciliation is that the internet itself has created alternative channels of information production. Some evidence suggests that online friendships – internet "friendships" - can mitigate adverse selection and asymmetry in a crowdfunding venue (Lin, Prabhala and Viswanathan 2013). Alternatively, crowdfunding may ultimately play a role that is similar in economic importance to small business credit scoring (SBCS) whose scope is generally capped at relatively small loans (e.g., below $100,000). SBCS reflects a very low cost screening mechanism but offers little in the way of monitoring and renegotiation. Likewise, the chief advantage of crowdfunding may also be related to its low origination costs (i.e., low screening costs) – alternative information channels notwithstanding. And, like SBCS, crowdfunding mostly ignores the monitor-

ing side. If so, then economies of scale in funding size (i.e., economies of scale in information production) may work in favour of crowdfunding for small amounts but work in favour of traditional intermediation (e.g., banks and venture capital funds) for larger amounts were more costly screening and monitoring can be amortized over a larger deal size.

5. Conclusions

While SME access to finance has long been a frontline policy issue, the intensity of interest in this topic has never been higher. This article considers several of the most interesting issues surrounding SME access to finance in a European context. These issues are related to government, regulatory and market forces. The article uses the lending channel paradigm as a useful prism with which to conduct this analysis. In particular the article uses this prism to consider the impact on SME access to finance from: the introduction of Basel III, government guarantee schemes, SME securitization, and the spread of venture capital and crowd funding in Europe.

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Matching demand and supply in SMEs financing

by Carmine Di Noia, Alexandra D'Onofrio and Alberto Giovannini[18]

Abstract

In the aftermath of the crisis, we are dealing with an issue of mismatched demand and supply in SMEs financing, that the traditional lending technologies and actors seem not able to overcome. In this essay, we have summarized the main actors, technologies and informational issues involved in the SMEs financing. On one side, there are the banks who are typically the originators of loans, and follow the traditional banking technology. On the other side, there is the entire investor community, that is made up of new lending entities, like shadow banks, in a broad sense, but also other private and public agents. A solution to the mismatched demand and supply in SMEs financing requires at the same time a diversification both of actors and of technologies used in the financial markets.

1. Introduction

The global financial crisis of 2007-2009 has profoundly affected the business conditions for SMEs, and exacerbated their financial constraints. As a result, funding deficiencies have emerged across European countries, together with low investment and growth. In the aftermath of the crisis, we are dealing

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with an issue of mismatched demand and supply in SMEs financing, that the traditional lending technologies and actors seem not able to overcome. It is a fact that financial resources dried up for SMEs including in many cases the most dynamic enterprises. It is still unclear where the causes of the problem actually lie: do they lie in the supply or in the demand side of finance? Moreover, is it a transitory issue, i.e. crisis related, that is slowly being resolved over time as the effect of the financial crisis fades, or, rather, a structural one that will persist?

At the same time, markets are gaining ground as a source of finance for European corporates. However, this promising picture characterizes mostly large companies, that can count on a relatively easy access to market finance as an alternative to bank finance. In fact the European corporate sector has in aggregate significantly decreased its level of borrowing and in many countries it is becoming a net provider of funds to the financial system (Giovannini et al. 2015). SMEs are not served by market finance in a manner that is adequate to compensate the lower level of funding provided by banks. Thus, it is especially SMEs that are suffering from a mismatching in supply and demand for financing.

The European corporate structure is dominated by SMEs. In Europe there are 21.3 million firms, employing 88.6 million individuals and producing €3,537 billion of gross value added: they represent the 99.8 per cent of all companies, 67.4 per cent of employment and 58.1 per cent of gross value added (Kraemer-Eis et al. 2013, Giovannini et al. 2015). The size distribution differs across Europe: however, European countries with the highest prevalence of SMEs suffered the most severe economic downturn (Klein 2014). Moreover, the financial position of firms is one of the main determinants of their investment and innovation decisions. European SMEs rely mainly on external finance and most of it is provided by the banking sector. The excessive reliance on bank credit is one of the factors that have made SMEs particularly vulnerable in the aftermath of the crisis.

SMEs financing problems are currently under scrutiny by European policymakers. In February, the European Commission has launched a public consultation on the topic of Capital Markets Union with the aim to support higher integration and promote higher access to funding for SMEs. The Commission released a Green Paper to illustrate the main areas that the consultation sought to address: improving access to financing for all businesses across Europe and

investment projects, in particular start-ups, SMEs and long-term projects; increasing and diversifying the sources of funding from investors in the EU and all over the world; and making the markets work more effectively so that the connections between investors and those who need funding are more efficient and effective, both within Member States and cross-border.[19] The Action Plan, released on September 30th, restates as key principles of the entire projects creating more opportunities for investors, connecting financing to the real economy, fostering a stronger and more resilient financial system, deepening financial integration and increasing competition. It also provides some indications about the next initiatives that the Commission wants to promote.[20]

In a recent survey, the OECD have monitored SMEs' and entrepreneurs' access to finance in 34 countries over the period 2007-13 to evaluate their financing needs and whether they are being met or not.[21] Three of their findings are particularly interesting. First, they found that access to finance to SMEs is still constrained by the dismal macroeconomic performance and bank deleveraging, leaving SMEs with fewer alternatives available than large firms. Second, they noticed that there is also a potential drop in demand of credit by SMEs even in presence of eased credit conditions. Third, non-bank finance instruments are gaining ground but still cannot compensate for a retrenchment in bank lending, in spite of the various government initiatives pushing in that direction. These three findings reflect three different elements of the problem of mismatched demand and supply in SMEs financing: actors involved, information and technology.

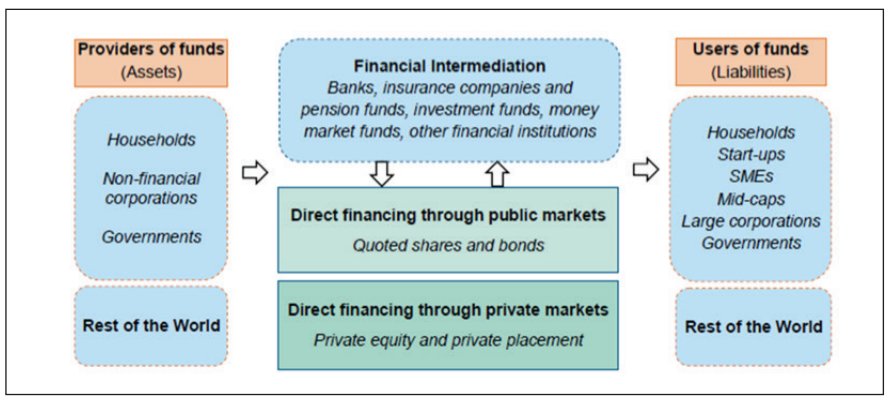
2. Actors, information and technology for SMEs' financing

Who are the actors in the marketplace for SMEs' financing? On one side, there are the banks who are the originators of loans, and follow the traditional banking technology. On the other side, there is the entire investor community, that is made up of new lending entities, like shadow banks, in a broad

19. See European Commission (2015).
20. In particular, key early actions are new rules on securitisation, new rules on Solvency II treatment of infrastructure projects, public consultation on venture capital, public consultation on covered bonds, cumulative impact of financial legislation.
21. See OECD (2015).

sense, but also other private and public agents. Given that SMEs' financing is particularly fragmented and diverse, who could be the most efficient actor providing for SMEs financing? The chart in Figure 1 represents a stylized scheme of the flow of funds that happens in the economy and the different actors involved. The matching between financial resources from the providers of funds (e.g., domestic and foreign households, governments, NFC) to the users (e.g., domestic and foreign households, start-ups, SMEs ...) is possible through financial markets. The actors that operate on financial markets, in a broad sense, are financial intermediaries, i.e. banks, insurance companies and pension funds, money market funds and other financial institutions, but also other private and public agents, i.e. household, NFC, governments, that can use capital markets. Usually, capital markets financing is also defined as direct financing, since investors and borrowers exchange securities directly, as opposed to indirect financing that takes place through financial intermediaries, mostly banks. With the development of international financial markets and the changing business of banks, banks themselves are becoming investors and borrowers active on capital markets, making the traditional distinction more and more opaque. With the crisis, the entire mechanism, however, has shown its intrinsic fragility at the expenses of some actors. SMEs have been those most affected since they have been credit rationed from the banking side and at the same time did not have the appropriate size and characteristics to look directly for funds on capital markets.

Figure 1. Stylized view of capital markets in the broader financial system



Source: *European Commission (2015).*

By their very nature, SMEs are less equipped to access public markets. Think for example about the way owners/entrepreneurs manage the finances of their own company: they are in many cases fully integrated with their own personal finances. Using regulatory language, SMEs are more likely to be affected by related party transactions problems than larger corporations. Yet, the main difficulty faced by SMEs in approaching financial markets is the lack of credit information. Information is critical in the functioning of the financial system. Information is one of the fundamental inputs of the financial business. If we think of Robert Merton's catalogue of the functions of a financial system (provision of payments systems; pooling of funds to undertake large-scale indivisible investments; transfer of economic resources through time and across geographic regions and industries; trading of risk; supply of price and other information to help coordinate decentralized decision-making in various sectors of the economy; development of contractual mechanisms to deal with asymmetric information and incentive problems), every function performed requires appropriate provision of information to the parties involved.[22] There is a serious information deficiency in financial markets. Technical standards, conventions, regulations and laws do not timely respond to the benefits of technological progress, and reduce incentives of private actors to innovate. This may sound particularly odd when we think how fast information and communication technologies are evolving in the modern economy. However, it causes most of the information inadequacy that affects the structure of the modern financial system.

Is there a better information structure? Access to information involves two aspects: there is an issue about the availability of the information and an issue about the production and comparability cross-border. For example, there are countries in which it is not even mandatory to deposit the balance sheet and countries where it is, or countries where the obligation is not enforced. One of the main challenges in building a well-functioning informational infrastructure is the small size of a majority of corporate borrowers. There are fixed costs of setting up information flows that are adequate and complete to let investors take their decisions. Banks play a critical role in addressing information deficiencies since they owns an invaluable information set about corporate borrow-

22. See Merton (1995, pp. 23-41) and Giovannini et al. (2015, pp. 59-63).

ers. Information problems are particularly acute for small borrowers. Larger borrowers, typically public companies, are subject to disclosure requirements, governance rules and other obligations that make collection of information and the assessment of their credit worthiness an easier task. SMEs have little access to securities markets in Europe. Moreover, SMEs' owners and managers release information to minority shareholders, to the other stakeholders and to the public in general, keeping in mind the goal of maintaining corporate control.

Given the current state of information provision for the purpose of financing of SMEs, there is plenty of room for improvements, and opportunities for innovation. The effects of these improvements and innovations could be to support a market for corporate financing that complements the traditional banking channel. Many reforms have been suggested to improve the quality of information (see, for example, Giovannini and Moran 2013). In Europe, the aggregation of business registers would be an important step further in this direction. Business registers typically examine and store information on the company's legal form, its seat and its legal representatives, and make it available to the public. SMEs should be required to deposit, for free or at marginal cost, their annual accounts on an electronic support at business registers. Once these data are available and accessible to everyone on an EU wide basis, for free or at marginal costs, investors would potentially be able to address borrowers' worthiness and take informed investment decisions. Securities markets can function only if investors can rely on liquidity. Liquidity is provided by active trading in secondary markets. Secondary markets need to be well developed to make securities markets an efficient and reasonably convenient investment option. In presence of a myriad of small borrowers, the only solution to let them access securities markets is to aggregate loans to different borrowers in pools that are large enough to sustain an acceptable volume of transactions every day. The aggregation exercise requires reliable and detailed risk information about each individual loan.

According to the traditional technology, banks act as originators of loans. Banking technology is characterized by liquidity management and complementarities between transaction banking and credit business: the bank owns a "window" on the client that allows it to address its worthiness, i.e. the flow of payments of a bank's client contains information about that client's economic health. Is today such technology still viable? Are really banks the actors for SMEs? We believe the jury is still out on this question. Banks have undergone

very large cost-cutting programs, which have compelled them to reassess corporate lending. Credit assessment is a technology with a significant fixed-cost component: therefore in a cost-cutting exercise small businesses will be rejected ex-ante. We are currently observing a number of cases where banks outsource credit assessment to specialized companies—a model that is far removed to the traditional banking business model. In addition, as shown by the recent global financial crisis, a bank-centred financial system has serious fragilities. Such fragilities are caused by the fact that banks have moved to activities, such as derivatives business and proprietary trading, characterized by high risk/high return profiles. Now however, and especially in Europe, there is growing concern that, despite the presence of banks in securities trading, securities markets are not sufficiently developed. In Europe the size of bank intermediation versus securities intermediation is significantly higher than in the United States, and large parts of the economy, especially SMEs, are excluded from securities financing.

3. Shadow banking and other non-bank sources of SME's finance

Assuming that the development of capital markets would allow SMEs to access them more easily than today, still, who should take the risk for funding SMEs if not traditional banks? An important issue to consider is certainly shadow banking. There are many views about it and whether it is riskless or not, accessible to anyone or limited to experts and specialists, unregulated or subject to the same safeguards in terms of constraints and regulation of traditional banks. Is it an entity that does liquidity and maturity transformation, exactly like banks? If so, why doesn't it have the same safeguards?

Shadow banking has been the main culprit of the 2007-2008 financial crises. Yet, it has been overlooked by the regulatory response to the crisis. The name itself might be misleading with respect to the phenomenon under consideration. Commentators started to use the label 'shadow' to refer to any financial activity and subject not yet regulated in the American system, as opposed to the highly regulated banking sector. FSB (2013) describes the shadow banking system as "credit intermediation involving entities and activities (fully or partially) outside the regular banking system", i.e. shadow banking comprises any activity outside banks. As good as a benchmark definition, it still does not entirely

capture the described phenomenon, since not all non-bank lending is shadow banking. An alternative 'functional' approach (Claessens et al., 2012; Poszar et al., 2010, revised 2012) focuses on the intermediation services provided by the shadow banking system. It defines shadow banking as a collection of activities each of them responding to its own demand factors, such as securitization, collateral services, bank wholesale funding arrangement, deposit-taking and lending by non-banks. However, the list suggested by the functional approach might leave out new future shadow banking activities and it might not capture shadow banking activities in operation in countries other than the US (e.g., lending by insurance companies in Europe or wealth management products in China). The specific combination of repos and securitization, called "securitized banking" (Gorton and Metrick, 2010), is just a part of the broader shadow banking that includes also activities beyond repos and securitization, such as investment banks, money-market mutual funds (MMMFs), and mortgage brokers, sale-and-repurchase agreements (repos), asset-backed securities (ABSs), collateralized debt obligations (CDOs), and asset-backed commercial paper (ABCP).

Claessens and Ratnovski (2014) suggest a new way to describe shadow banking as "all financial activities, except traditional banking, which require a private or public backstop to operate." The need for an official backstop is thus key to shadow banking operation. In this view, shadow banking can also be seen as "money market funding of capital market lending" (Mehrling et al., 2013) or activity of issuing very short term money market like instruments and investing the proceeds in longer-term financial assets (Ricks, 2012). These definitions have in common two important characteristics of shadow banking: maturity transformation and the integration of money market (short term wholesale funding) with capital markets (risk pricing and collaterals). The latter emphasizes how shadow banking is a "monetary phenomenon, not just a financial one" (Ricks, 2012), and thus has to be analysed in conjunction with the design of the monetary system. The need for an official backstop is due to the fact that shadow banking activities involve risky maturities transformation, just like traditional banking, through many capital markets mechanisms instead of a single banking balance sheet.

The key point in the definition of shadow banking is the systemic risk that can arise from maturity transformation and the need for a backstop. Only activities that need access to backstop, since they combine risky maturity trans-

formation, low margins and high scale with residual tail risks, are systemically-important shadow banking. Each time a monetary liability redeemable at par is invested in illiquid activities, problems arise once a doubt that there is some secret on the value of the bank (i.e., unknown losses) spread around and generate a run on the shadow banking, in the form, for example, of a sudden stop in banks' ability to rollover their short term debt. The 2007-2008 financial crises can be considered as a run on shadow banking, that essentially took the form of a run on three types of activities: repos, commercial papers and money market mutual funds (Gorton and Metrick, 2010). Hence, we learned that the official backstop was at the time done through implicit and explicit support from sponsor banks.

The focus of the regulatory debate on financial markets has to move towards the strengthening of oversight and regulation of shadow banking, as FSB (2013, 2014) is suggesting. The main policy challenges are given by the correct identification of shadow banking risks and the importance of preventing shadow banking from accumulating systemic risks through regulation and macro prudential supervision. Such challenges are not outside the regulatory reach as long as regulators can control the ability of regulated entities to use their franchise value to support shadow banking activities, manage government guarantees and reduce the too-big-to-fail problem. With these safeguards in place, shadow banks could also play a role as funding actors for SMEs.

There are also other sources of finance for SMEs that need some attention for their potential evolution. Minibonds are a potential important source of finance for SMEs. In countries like Italy they have been well received, although still of limited size and diffusion. The fact that minibonds cannot be purchased by retail investors (imposition that reflects the regulator's over-concern of consumer protection) is the main reason of their limited market development. The key feature is a series of softer requirements for issuers and discounts on services like rating. Individual issues are so small that they cannot be considered as instruments tradable in the market, i.e. they are still not liquid enough. Most vehicle investing in minibonds are adopting the policy of holding them until maturity. Hence minibonds are just another legal scheme for arranging private placements. The objective of making SME credit tradable has not, and could not, been met, but the simplification of the issuance process has had some positive effects.

There are also other private initiatives worth mentioning in terms of diversified funding for SMEs. One of the most successful innovations in financing of SMEs, though not through securities markets, is a set of private initiatives that rely on a novel way to gather and manage information: the phenomenon of eFinance, or crowdfunding. The development of social networks and the ease and speed of dissemination of information through the web contribute to its successful implementation. Crowdfunding initiatives offer both debt and equity finance, typically to very small projects that are distributed to large numbers of very small investors. The success of these projects demonstrates that they are filling a real gap in the marketplace especially for SMEs.

4. Conclusions

In this essay, we have summarized the main actors, technologies and informational issues involved in the SMEs financing. On one side, there are the banks that are typically the originators of loans, and follow the traditional banking technology. On the other side, there is the entire investor community, that is made up of new lending entities, like shadow banks, in a broad sense, but also other private and public agents. SMEs' financing is particularly fragmented and diverse, so it is not obvious who could be the most efficient actor providing for SMEs financing. Similarly, it is not clear what should be the most efficient technology and informational infrastructure. A solution to the mismatched demand and supply in SMEs financing requires at the same time a diversification both of actors and of technologies used in the financial markets. The effects of the mismatching in demand and supply in SMEs financing have certainly been exacerbated by the financial crisis. However, there are many issues that are structural in nature and need to be adequately addressed. We believe banks will still play an important role in SMEs funding; this will require a streamline in their business model. An important role for the public authorities is the creation of an informational infrastructure that is widely recognized as the missing element for the development of an efficient SMEs financing. At the same time, more incentives should be introduced in order to further develop all those market and private initiatives for micro lending.

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How Relationships Can Reduce Risk in Small Business Lending

by Robert DeYoung[23]

Abstract

This essay summarizes the results from three recent research studies on small business lending in the U.S. Each of these studies provides evidence for considering the question "Who takes the risks for funding SMEs?" The risks associated with funding small businesses are borne by numerous factions in our societies, including but not limited to entrepreneurs, bank lenders, and taxpayers. The incidence of risk-bearing across these factions varies with the business cycle, with innovations in lending technologies, and with differences in social infrastructure. Overall, the level of risk is lower when bank-borrow relationships are stronger.

1. Introduction

New businesses and small businesses are relatively risky endeavours. For example, about 17% of new business start-ups in the U.S. exit the market within one year; as young firms gain experience they become more resilient, but even for five-year old firms the exit rate still averages 8% per year (Haltiwanger 2014). About 50% of private firms born in the U.S. in 2009, and about 30% of U.S. firms that were already five-years old in 2009, had exited the market by

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2014 (U.S. Bureau of Labour and Statistics 2015). Small business activity is risky for the entrepreneurs who invest their own capital, risky for banks and other creditors that lend money to these firms, risky for households and businesses that provide labour and materials to these firms, and in some cases risky for taxpayers who foot the bill for government programs that subsidize small businesses. These risks know no boundaries: They present themselves in all western economies.

Why do all these constituents willingly provide financial and material support for such risky projects? Explaining why entrepreneurs put their own time and capital at risk—rather than invest their time and capital in firms run by others—is an almost metaphysical question; the mystery of why entrepreneurs act as they do lies outside the purposes of this essay. It is easier to understand why banks offer credit to entrepreneurs and small businesses: in the short-run, banks seek to earn a rate of interest commensurate with the credit risk of the small business in question, while in the long-run banks seek to establish lucrative ongoing relationships with successful, expanding small businesses. In both short-run and long-run, the credit risk is shared: if the loan defaults then the bank absorbs the losses; if the loan does not default then the borrower absorbs the probable losses (i.e., the loan interest rate it pays includes a risk premium). Similarly, households and suppliers hope that their short-term associations with risky start-up firms turn into permanent long-term relationships with successful small businesses.

In contrast, taxpayers do not receive any direct financial return when a new business start-up succeeds. Taxpayer funded, government-run small business lending programs are designed to produce a public good—and the public good produced by a vibrant small business sector can be substantial. According to the U.S. Small Business Administration (2014), small businesses have historically employed about one-half of the U.S. labour force and have created nearly two-thirds of net new private sector jobs in the U.S. annually. Haltiwanger (2014) estimates that start-up firms plus fast-growing young firms historically have accounted for about 70 percent of gross U.S. job creation annually.

In recent years the pace of new business formation has slowed in the U.S. According to data from the U.S. Bureau of Labour and Statistics, private businesses younger than one-year old employed 4.7 million Americans in 1999, the all-time high for employment at start-up firms. But new business start-ups began

to decline during the 2000s, and plunged steeply in the aftermath of the global financial crisis. By 2010, businesses less than one-year old were employing only 2.5 million U.S. workers; after five years of post-crisis economic recovery, this figure had improved to just 2.9 million workers in 2014. This decline in new business formation is indicative not just of the multiple challenges facing new business start-ups in the U.S., but of the multiple challenges that now face all small businesses in all western economies.

Three challenges dominate the landscape. First, western economies in general are experiencing what some economists have called a "secular stagnation" in which slow macroeconomic growth is the new normal. Even in the U.S., which has enjoyed faster and more consistent post-crisis growth than most western economies, annualized real GDP growth has averaged only about 2.2% during the 2009-2015 expansion. This is substantially slower than the GDP growth experienced during the three previous U.S. recoveries (2.7% during 2001-2007, 3.8% during 1991-2000, and 4.3% during 1983-1990). Second, increased business regulations have imposed compliance costs on businesses of all sizes; the substantial expansion in federal regulation in the U.S. during the Obama Administration provides a clear example. When even a portion of new regulatory compliance costs are fixed costs, the incidence of these new regulations falls most heavily on smaller firms. Increased expenditures necessary to comply with expanded healthcare rules, environmental rules, and labour rules—and the uncertainty associated with the likelihood of future new regulations—make entrepreneurs less likely to start new firms and less likely to expand existing firms. Third, the uncertain economic and business climate—coupled with increasingly stringent bank regulation and supervision—has reduced banks' willingness to make loans. Without credit, small businesses cannot grow. And in most western economies, job creation slows to a halt without small business growth.

2. The credit crunch and small business lenders

My research with Anne Gron, Gokhan Torna and Andrew Winton documents the reduction in small business loan supply in the U.S. during the financial crisis (DeYoung, et al. 2015). Importantly, we show that a small and special set of U.S. small business lenders did not participate in this credit crunch, but instead increased their supply of credit to small businesses during the crisis years. What was so special about this small set of banks? These banks had established a long,

pre-financial crisis history of investing large portions of their loan portfolios in small business loans. They made credit available to small businesses on a year-in and year-out basis; in other words, these banks had a history of relationship lending. And as our empirical tests reveal, this small set of lenders passed the relationship-lending acid test by making new credit available during a severe economic downturn, that is, when their clients were not only most in need of that credit, but also when their clients were most likely to default.

Studying small business loan supply in the U.S. is difficult because, unlike in many European countries, loan-level credit registries do not exist. To test whether U.S. banks reduced their supply of small business credit during the financial crisis, we focused on business lending at banks with assets less than $2 billion—banks that are so small that all of their business loans have to be small business loans. We tracked over 3,200 small commercial banks each quarter from 1991 through 2010, which provided us with a long baseline period to investigate pre-crisis small business loan supply (1991-2007), and also a shorter crisis period (2007-2010) within which to test for credit crunch-like behaviour by these banks.

We used these data to estimate the parameters of a theoretical loan supply function similar in spirit to the models of Froot, Sharfstein and Stein (1993), Froot and Stein (1998) and Gron and Winton (2001). The underlying assumptions are consistent with conditions that face small banks. First, we assume that capital markets are imperfect so that raising external capital is expensive; in the real world, this matches up well with thousands of small U.S. banks whose equity shares do not trade in public markets. Second, we assume that loan markets are imperfect so that banks cannot sell their business loans at their actual value; in the real world, this matches up well with the general absence of liquid secondary markets for small business loans. In equilibrium, these two initial conditions result in "loan overhang" effects that can preclude banks from taking advantage of otherwise profitable new lending opportunities. Imperfect capital markets increase the cost of raising external capital to fund the new loans, and imperfect loan markets increase the cost of selling existing loans and using the proceeds to fund the new loans; either of these costly imperfections can make new lending opportunities unprofitable.

It is natural to use this theoretical framework to test for the existence and depth of a small business lending credit crunch. Capital markets should become

more imperfect during a financial crisis, because the decline in stock markets increases the cost of raising external capital. And secondary loan markets should become more imperfect during a financial crisis, because the credit-risk driven decline in the value of loans (or securities backed by loans) will increase the cost of raising capital through this channel. Indeed, we know that bank stock prices fell during the financial crisis, and the price of residential and commercial mortgage-backed securities also fell during the financial crisis. Thus, our theoretical model predicts greater loan overhang effects and hence less loan supply during the financial crisis.

This prediction is consistent with what we find for the vast majority of the banks in our data. Business loan supply declined on average by about 2% per quarter during the financial crisis, and the negative effects of loan overhang increased by 56% compared to the pre-crisis period. Moreover, the expected positive relationship between small business loan supply and the risk-adjusted return on loans—which was economically and statistically significant in the pre-crisis data—disappeared during the crisis years. This result is consistent with quantity credit rationing by banks during the financial crisis, that is, a credit crunch.

We find very different results for the small cadre of lenders—about 17% of the banks in our data—with strong pre-crisis histories of making small business loans. To be included in this group, banks had to be among the top quartile of banks in commercial loans-to-assets, and also be among the bottom quartile of banks in retail loans-to-assets, for at least 10 consecutive quarters.[24] We make the reasonable presumption that the typical bank in this group was strategically dedicated to making and holding illiquid small business loans. The data bears this presumption out: for these banks, we find that business loan supply increased on average by about 8% per quarter during the financial crisis.

So who bears the risk of small business lending? Our findings indicate that small, relationship-based commercial banks bear disproportionate amounts of risk, because they provide increased credit supply to their small business clients during portions of the business cycle when credit risk is highest. Our findings

24. For these banks, we define "commercial" loans to include business loans and commercial real estate loans, and "retail" loans to include consumer loans and residential real estate loans. Using a Kaplan-Meier hazard estimator, we show that the random chance of being in this group of "commercial focus" banks for 10 consecutive quarters is less than 1%.

also indicate that small business clients of commercial banks that are less dedicated to relationship lending bear the risk of being credit rationed during economic downturns.

3. Credit scoring and small business lenders

Large banks also make loans to small businesses. In the U.S., large banks collectively extend far more credit to the small business sector than do small banks. This should not be surprising, given the tremendous size disparity among U.S. commercial banks: the largest U.S. banks hold over $1 trillion in assets, so their loan portfolios can be literally thousands of times larger than the loan portfolio of a so-called "community bank" with well less than $1 billion in assets. But the nature of the small business loans made by very large and very small banks is very different. Large and small banks employ vastly different loan production techniques and execute fundamentally different business strategies; as a result, the lending relationships that develop (or do not develop, as the case may be) between these banks and their small business borrowers are fundamentally different. The credit risks associated with these loans, and the manner in which these risks are shared between the bank and the borrower, are also fundamentally different.

Because small business borrowers are not publicly traded firms, publicly available information about the credit worthiness of these firms is not generated in securities markets or by the financial analysts that follow these markets. Traditionally, the main reason that a bank lender could gather either soft information (e.g., about the personal character of the entrepreneur) or hard information (e.g., about the value of loan collateral) about a small business' creditworthiness was to be located geographically close to that business. If an initial loan to this business performed, then a second and perhaps larger loan would be made and other financial services might be provided as well. In the process of repeated bank-borrower interactions, the bank's store of private information about the firm would naturally grow larger and more valuable. A borrower-lender relationship is nothing more than the sum of this private information: the bank is willing to extend more credit at perhaps more favourable rates as its information advantage over competing lenders grows, and the small businesses is more

likely to stay with this bank because other lenders without this store of private information (either because they are located further away from the small business borrower and/or they have not had any financial dealings with the small business borrower) suffer adverse selection problems that prevent them from offering similarly favourable loan terms.[25]

It can be difficult for large banks to profitably apply this traditional approach to gathering and exploiting information about small business creditworthiness. At large banks, retail banking units—which in the typical large U.S. bank include both consumer lending and small business lending—gain competitive advantage (e.g., reduced operating costs) via high-volume production processes and decision-making practices. These processes require the separation of marketing, risk analysis and customer service functions into silos that operate at various different organizational and geographic locations. This large-scale lending approach is antithetical to the way that smaller banks have traditionally acquired and analysed the private information central to building small business relationships.

Small business credit scoring provides a good illustration of this difference. In the 1990s, large U.S. commercial banks began to use the personal credit scores of entrepreneurs to assess the creditworthiness of the small businesses run by these entrepreneurs. This information-collection strategy is consistent with the high volume-based approach to retail banking: the bank makes a small fixed payment to acquire the credit score for each small business loan applicant and rejects the loan application if the credit score falls below a pre-determined threshold. This loan production function eliminates costly bank-borrower interactions and as a result allows banks to lend to small businesses that are located far away from the bank. If these loans are made in large enough volumes, the resulting diversification effects can greatly reduce idiosyncratic credit risk.

Over time, it has become abundantly clear that credit scoring adds value to the small business lending production functions at most banks; today, even small banks use personal credit scores to augment their traditional information collection and credit risk management processes. But the impact of credit

25. Whether or not interest rates decline over the course of a maturing bank-borrower relationship depends on the net effect of two phenomena: A rate-reducing effect as lender uncertainty about the borrower's credit risk declines, and a rate-increasing "hold-up" effect (Peterson and Rajan 1995) as lender private information creates switching costs for the borrower.

scoring on the incidence of credit risk—that is, who bears the risk—is not at all straightforward. My research with Dennis Glennon and Peter Nigro sheds light on both the subtle and not-so-subtle ways that credit scoring influences small business lending credit risk (DeYoung, Glennon and Nigro 2008).

We examined loans made to small businesses by U.S. commercial banks under the Small Business Administration (SBA) flagship 7(a) loan program. In this program, banks make loans to especially credit-constrained small businesses and, in the event of default, the SBA guarantees a portion of the unpaid loan principal. Our data included 29,577 loans to small businesses between 1984 and 2001, made by commercial banks of all sizes. We observed the calendar quarters in which each of these loans was originated, the calendar quarters in which any of these loans defaulted, whether the lending bank used small business credit scoring techniques, the geographic distance between the lending bank and the borrowing small business, and a large number of other control variables including bank size. With these data in hand, we used a discrete-time hazard model (Shumway 2001) to estimate the probability of SBA loan default. The model revealed three core associations in the data.

First, and not surprising, we found that greater borrower-lender distance was associated with a higher probability of loan default. On average, a doubling of borrower-lender distance increased the probability of loan default by 2.4% per quarter. This complies strongly with the traditional notion that collecting accurate information about creditworthiness becomes more difficult and more costly without close physical proximity between the bank and the potential small business borrower.

Second, holding borrower-lender distance constant, we found that loans made by credit scoring banks were substantially more likely to default than loans made by banks that did not use credit scores. On average, loans written by credit scoring banks were 22.7 percent more likely to default each quarter. This is consistent with the common sense notion that the traditional in-person lending approach generates better information about credit risk than arms-length credit scoring approaches. It is also consistent with the logical conclusion that, because credit scoring is a less expensive way to underwrite a small business loan, a credit scoring lender is able to make loans to riskier small businesses (with higher default probabilities and hence lower expected gross returns, all else equal) and remain profitable.

Third, by adding a right-hand side variable to capture the interaction of these two effects, we found that the default-increasing effect of borrower-lender distance diminishes for credit scoring banks. For small businesses that were located relatively close to the bank, credit scored loans defaulted substantially more often than non-credit scored loans. But when borrower-lender distance was considerably greater than average, credit scored loans defaulted less often than non-credit scored loans. There are two ways to interpret this result. On-the-one-hand, a hard-information-only lending approach like credit scoring might outperform traditional small business lending approaches in extreme low-information circumstances in which making and maintaining person-to-person contact is costly. On-the-other-hand, traditional small business lending techniques are poorly suited for making loans to small businesses located far away, and it seems far more likely that this result merely reflects the foolishness of the poorly run banks that attempt to do so.

So who bears the risk of small business lending? Our findings indicate that the incidence of credit risk is distributed across banks, at least at the margin, depending on the lending technology they choose. But these marginal effects are dwarfed by the increase in overall credit risk at for loans that carry taxpayer-backed guarantees: about one-in-seven of the loans in our sample of SBA 7(a) loans ended up defaulting, and the SBA had provided the lending banks with 80% loan guarantees on average. Whether or not this taxpayer subsidy is socially beneficial ultimately depends on the number of new, permanent jobs created by the small businesses that receive these subsidized loans.

4. Social capital and small business lenders

By letting credit bureaus like Equifax, TransUnion, or Experian do their information gathering for them, a bank is making the following explicit trade-off: it accepts high loan default rates caused by making loans based on incomplete information on borrower creditworthiness, but it incurs low operating costs by slashing the expenses associated with information gathering, credit analysis, and relationship building. Casual empiricism suggests that this trade-off is profitable for many large U.S. banks, which adopted this approach several decades ago and have continued to use it.

Is it possible for a bank to reduce its small business lending information costs and also reduce the rate at which its small business loans default? This seems like a free lunch—and as every economist knows, there is no such thing as a free lunch. I am investigating this question in ongoing research with Dennis Glennon, Peter Nigro and Kenneth Spong (DeYoung, et al. 2015). Indeed, we do not find evidence of a free lunch; we merely find that the price of lunch is substantially lower in some places than in others.

Anyone who has lived in both a big city and also in a small town knows that the following is true: in a big city you know very little about the lives of your neighbours and they know very little about yours. But in a small town it is easy to learn about the lives of your neighbours and (perhaps unfortunately) your neighbours seem to quickly learn a lot about you. Arguably then, small town bankers should have a natural information advantage over bankers in large cities: because small town bankers are essentially making loans to their neighbours, it should cost them relatively less to gather and analyse the information necessary to accept or reject a small business loan application. Moreover, in these high-information towns, lending efficiencies may also arise on the demand side of the market: when everyone in town knows you, a small town borrower is likely to default less often in order to avoid public shame.

These informational advantages may or may not result in lower small business default rates. For instance, a small town bank might choose to expand its portfolio of small business loans to include local businesses with relatively high defaults risk. The low cost of gathering information in these towns, coupled with the greater efforts potentially expended by locals to avoid business failure, may allow the bank to absorb additional credit risk without sacrificing profits.

To test these conjectures, we first need to identify geographic places where information on the creditworthiness of small businesses is either relatively expensive, or relatively inexpensive, to collect and analyse. We turn to the concept of "social capital," recently made popular by sociologist Robert Putnam in his book *Bowling Alone* (Putnam 2000). Social capital can be loosely described as shared experience, interaction, empathy or cooperation among individuals and groups that result in better actual or expected societal outcomes. The concept emphasizes the value of social networks.

For empirical purposes, researchers have constructed social capital indices by combining information on local voter turnout, local response rates to govern-

ment census questionnaires, and local participation in civic, religious, political, professional and labour organizations. For our study, we use the Social Capital Index posted by Rupasingha and Goetz (2008), which is based on a principal components analysis of 18 different indicators of social capital for all U.S. counties in 1990, 1997 and 2005. We merge these data with observations on 33,948 Small Business Administration 7(a) loans originated by small U.S. commercial banks (assets less than $1 billion) between 1984 and 2012.[26] We limit our focus to small banks, because these banks are highly likely to be using the traditional in-person data collection techniques for which the cost of information matters most. With these data in hand, we estimate a discrete-time hazard model (Shumway 2001) of SBA loan default probability.

Our main conjecture is that small business loans should be less likely to default in counties where social capital is high—that is, where bankers' costs of gathering and analysing information on small business creditworthiness is likely to be low and/or where borrowers' personal and social shame from defaulting on a small business loan is likely to be high. We find strong evidence consistent with this conjecture in our controlled econometric tests. A one-standard deviation increase in the Social Capital Index in the borrower's local market is associated with an estimated 9.5% lower probability of loan default. A one-standard deviation increase in social capital averaged across the borrower's and the lender's local markets is associated with an estimated 9.8% lower probability of loan default. Loans for which both the borrower and the lender are located in high social capital counties (those in the upper quartile of the Social Capital Index) defaulted an estimated 13.3% less often than other loans. Loans for which both the borrower and the lender are located in low social capital counties (those in the lower quartile of the Social Capital Index) defaulted an estimated 11.5% more often than other loans.

So who bears the risk of small business lending? Given that successful small businesses tend to create a disproportionate number of jobs in the U.S., cities and towns with low levels of social infrastructure—where small business loans default at higher than average rates—are likely to bear the risk through lower rates of job creation and slower economic growth.

26. We make the assumption that social capital is relatively persistent across time in most cities and towns.

5. Conclusions

In this essay, I have summarized the results from three relatively recent or ongoing research projects on small business lending in the U.S. Each of these studies illustrate that stronger relationships—either between the small business borrower and her bank lender, or between the small business borrower and other local persons and institutions—reduce the risk of small business lending. The three studies also offer some empirical estimates of incidence of small business credit risk across banks, borrowers, taxpayers and other members of society. Although none of these projects was conducted with the question of "Who takes the risks for funding SMEs?" in mind, each generates results and implications that may be useful for considering this question. Moreover, although each of these projects was conducted using data from U.S. banks, U.S. borrowers, and U.S. lending programs, the conclusions drawn from these projects are very likely germane for European finance and society. In both the U.S. and in Europe, bank credit is the lifeblood of small business success, and small businesses are crucially important for new job creation and the macroeconomic growth.

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Public Credit Guarantees and Access to Finance[27]

by Juan Carlos Gozzi and Sergio Schmukler [28]

Abstract

Public credit guarantee schemes have gained popularity as a tool to try to increase access to credit for firms perceived to be financially constrained, typically small and medium-sized enterprises. This paper discusses the potential relevance of these schemes by providing a brief overview of their use around the world and reviewing some important design features. The paper also presents a brief conceptual discussion of the role of public credit guarantees in increasing access to credit and the rationale for government intervention. Public credit guarantee schemes can constitute useful mechanisms for increasing access to finance for certain groups of borrowers, but their success and financial sustainability hinge on proper design. Moreover, rigorous evidence on the impact of these schemes is still scarce. More in-depth evaluations that jointly take into account financial sustainability and (financial and economic) additionality are needed, as well as an assessment of credit guarantees against alternative policy instruments.

27. This paper builds on collaborative work with Augusto de la Torre for the forthcoming book: Innovative Experiences in Access to Finance: Market Friendly Roles for the Visible Hand? We would like to thank Miriam Bruhn for work on earlier versions of this material and Giacomo Calzolari and Alberto Franco Pozzolo for very useful comments. Work on this paper was completed while Gozzi was visiting the Einaudi Institute for Economics and Finance. The findings, interpretations, and conclusions expressed in this paper are entirely those of the authors and do not necessarily represent the views of the World Bank.
JEL Classification Codes: E44, G28, H11, O16
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1. Introduction

Over the last decades, public credit guarantee schemes have become a popular tool to try to increase access to credit for firms perceived to be underserved by private financial intermediaries, such a small and medium-sized enterprises (SMEs). However, many questions remain about how these programs actually work and their impact.

This paper discusses the potential relevance of public credit guarantee schemes by providing a brief overview of their use around the world and reviewing some important design features of these schemes. We also present a brief conceptual discussion of the role of public credit guarantees in increasing access to credit to firms and the rationale for government intervention.[29]

Credit guarantee schemes are mechanisms in which a third party—the guarantor—pledges to repay some or the entire loan amount to the lender in case of borrower default. The guarantor assumes part or all of the credit risk, reducing the risk faced by financial intermediaries and thus making it possible for firms to obtain credit or improve the terms and conditions under which they can borrow.

Credit guarantee schemes are widespread, with more than 2,250 credit guarantee schemes of different types operating in over 70 countries by the early 2000s (Pombo and Herrero, 2003). Since the 1950s, governments have established public credit guarantee schemes, usually targeted at some sector, region, or type of firm (such as SMEs, young firms, exporters, and innovators) considered to be underserved by private financial intermediaries and/or whose growth is thought to have positive externalities. Public credit guarantee schemes have become increasingly popular among governments during the past few decades and are now widespread in both developed and developing countries. Moreover, all multilateral development banks operate some form of credit guarantee scheme.

29. This paper focuses on credit guarantee schemes that provide guarantees directly to financial institutions to cover outstanding loans. Another form of credit guarantee scheme is counter-guarantees, which provide indirect protection to the lender through a guarantee of the main guarantor, e.g. if the main guarantor is a mutual guarantee association. Counter-guarantee schemes are much less common than direct credit guarantee schemes. Also, we do not discuss guarantee schemes focused on guaranteeing export credits against purchaser default, as they raise additional conceptual issues. See, for instance, Stephens (1999) and Auboin and Meier-Ewert (2004) for discussions of some of these issues.

Public credit guarantee schemes have significantly expanded in the aftermath of the 2008-2009 global financial crisis, as several countries (including Canada, Chile, Finland, Germany, the Netherlands, and South Korea) relied heavily on these schemes to compensate for the reduction in private bank lending.[30] In many countries, existing guarantee programs were ramped up, with increases in the total amount of funds available, the number of eligible enterprises, the percentage of the loan guaranteed, and/or the size of the guaranteed loans. In other countries, new programs were introduced. The countercyclical use of public credit guarantee schemes during the global financial crisis has led, in many instances, to a significant increase in their scale and scope. This has usually implied a greater commitment on public finances and has increased their risk exposure, which could threaten the financial sustainability of some schemes over the medium to long term.[31]

Despite the significant expansion of public credit guarantee schemes over the last decades and the increasing interest of policymakers in these schemes, there is little theoretical analysis and empirical evidence to systematically inform their design, implementation, and assessment. Although these programs are usually justified based on some social objectives, the rationale underlying the choice of credit guarantees instead of other forms of government intervention is usually left unexplained. Moreover, the precise goals of these schemes are often unclear, making cost-benefit analyses difficult.

Before proceeding, it is important to note that this paper is neither a full-fledged literature survey on public credit guarantee schemes nor a comprehensive assessment of their effectiveness. Rather, it provides a short overview of how public credit guarantees schemes work and a discussion of some design issues that can influence their effectiveness, as well as some critical thoughts on the conceptual arguments that might justify government intervention.

The remainder of the paper is organized as follows. Section 2 provides a conceptual discussion of credit guarantee schemes and how they might help overcome barriers to access to credit. Section 3 presents a general overview of public credit guarantee schemes around the world, reviewing some impor-

30. See OECD (2010, 2012, 2013) and World Bank (2013) for discussions on the use of public credit guarantee schemes as countercyclical tools during the financial crisis.
31. KPMG (2012) finds that public credit guarantee schemes used as countercyclical tools during the crisis reported a considerable increase in bad debts.

tant design features of these schemes and discussing the existing evidence on their performance and financial sustainability. Section 4 concludes with some thoughts on the role of these schemes in overcoming barriers to access to finance and the rationale for government intervention.

2. How Do Credit Guarantees Work?

Credit guarantee schemes are mechanisms in which a third party—the guarantor—pledges to repay some or the entire loan amount to the lender in case of borrower default. This reduces the lender's expected credit losses, even if the probability of default remains unchanged, acting as a form of insurance against default. The guarantor charges a fee for this service. A credit guarantee can lower the amount of collateral that the borrower needs to pledge to receive a loan, because the guarantor effectively provides a substitute for collateral. Similarly, for a given amount of collateral, the credit guarantee can allow riskier borrowers to receive a loan and/or to obtain better lending conditions (e.g., longer maturities, lower rates, higher loan amounts), because the guarantee lowers the risk faced by lenders.

Credit guarantee schemes can (and do) emerge privately. This typically happens for three reasons (Honohan, 2010). First, guarantors could have some advantage in dealing with principal agent problems. As is well known in the literature, asymmetric information and enforcement problems can lead to the exclusion of creditworthy borrowers from credit markets.[32] In this situation, if guarantors have any informational or enforcement advantage over lenders, they can help overcome principal agent problems and improve access to credit and/or reduce borrowing costs for certain borrowers. For instance, members of small business organizations might form a mutual guarantee association (MGA), in which firms deposit money into a fund that guarantees loans to members from financial institutions, to take advantage of the fact that they have better information about each other than lenders do. MGAs typically evaluate their members carefully and can thus act as a screening device, reducing asymmetric informa-

32. For example, Jaffee and Russell (1976) and Stiglitz and Weiss (1981) show that asymmetric information can lead to adverse selection, as higher interest rates attract riskier borrowers, which can result in credit rationing. See de la Torre, Gozzi, and Schmukler (2015) for a conceptual discussion of how principal agent problems could lead to problems of access to finance.

tion problems. The fact that other firms are willing to accept joint responsibility for a loan to a given firm provides a positive signal to lenders regarding its credit quality. Moreover, MGAs have a group liability structure, because all borrowers backed by the scheme have a financial stake in the guarantee fund. This means that members face a cost in case of default by other members and therefore have incentives to monitor each other, ameliorating moral hazard problems.

Second, guarantors might have some advantages relative to lenders in spreading and diversifying risks. If lenders face some restrictions that prevent them from diversifying their loan portfolios (e.g., because their portfolios are geographically concentrated or focused on certain types of borrowers), guarantors might be able to spread risks by providing guarantees to several lenders, thus improving risk diversification.

Third, credit guarantees can sometimes be used for regulatory arbitrage. This can occur, for instance, when guarantors face different regulations than lenders and can provide guarantees that allow an otherwise insufficiently secured loan to meet regulatory requirements.

None of these three reasons imply a need for government participation in credit guarantee schemes. However, governments often do get involved in these schemes, usually in two different ways. First, governments might provide funds to private guarantee schemes, such as MGAs. Second, governments can set up a public credit guarantee scheme. Beck, Klapper, and Mendoza (2010) conduct a survey of credit guarantee schemes around the world and find that the majority of credit guarantee schemes in developing countries are public schemes, while the majority of credit guarantee schemes in developed countries are MGAs. MGAs are particularly common in Europe. For example, Italy has about 950 MGAs, Germany 24, Spain 20, and France ten (ADB, 2007). MGAs in most European countries are often coordinated through one or more guarantee federations and tend to receive some financial support from the government.

In this paper, we focus on public credit guarantee schemes not only because these schemes exist in many countries, but also because there is significant debate regarding their role in ameliorating problems of access to finance. Unlike MGAs, public credit guarantee schemes do not typically have better information about borrowers than lenders do, and thus do not directly reduce information asymmetries. Rodriguez-Mesa (2004) points out that credit guarantees

can serve as a substitute for collateral, but they do not play any of the roles that collateral plays in reducing moral hazard and adverse selection, because borrowers are not pledging their own assets and thus do not face an additional cost in case of default. Vogel and Adams (1997) argue that public credit guarantee schemes can actually increase information problems by reducing lenders' incentives to carefully screen and monitor borrowers. On the other hand, public guarantee schemes might reduce information asymmetries, at least in the long-run, by acting as a subsidy for lenders to learn about new groups of borrowers. We discuss these issues in more detail in Section 4.

3. Public Credit Guarantee Schemes around the World

Credit guarantee schemes have existed in different forms at least since the 19th century. Some of the first credit guarantee schemes were mutual credit guarantee associations that developed out of guild or craft organizations in Europe. The first public credit guarantee scheme was founded in Holland in 1915. Japan established a regional government-run credit guarantee scheme in Tokyo in 1937, with schemes in other regions of Japan starting operations in the 1940s. A handful of other countries established public credit guarantee schemes in the 1950s However, the majority of government-run credit guarantee schemes were established in the 1990s and 2000s (Pombo and Herrero, 2003).

The size of public credit guarantee schemes in terms of the volume of loans guaranteed varies widely across countries. Some of the largest public credit guarantee schemes are in Asia. The Japanese credit guarantee system is regarded as the largest in the world in terms of the volume of guarantees, with about 730,000 new loans guaranteed in 2013 and a stock outstanding of 3.1 million guarantees, totalling about 305 billion U.S. dollars. The second largest scheme is in South Korea, with a stock of more than 400,000 outstanding guarantees in 2013, totalling about 40 billion U.S. dollars (almost four percent of South Korean GDP).[33] In contrast, Beck, Klapper, and Mendoza (2010) find that most public credit guarantee schemes in their survey have a stock of less than 100,000

33. See de la Torre, Gozzi, and Schmukler (2015) for a brief overview of public credit guarantee schemes in South Korea.

outstanding guarantees, with two thirds of these schemes granting less than 1,000 new loan guarantees per year. This small size typically results in high operating expenses, given the existence of some economies of scale.

3.1 Design Issues

Public credit guarantee schemes around the world differ in their design, specifically in their management structure, operating rules, and the characteristics of their guarantees, such as the coverage ratio and pricing. These design choices can be critical for the success and financial sustainability of credit guarantee schemes, because they influence the participation of financial institutions, administrative costs, and loan default rates. In this section, we briefly discuss these issues and review some international experiences.

The first question that arises when designing a publicly funded credit guarantee scheme is whether the scheme should be solely publicly managed or whether all or part of its activities should be outsourced to the private sector. Running a credit guarantee scheme encompasses a number of tasks, including the management of the guarantee fund, assessing the loans to be guaranteed, and working to recover defaulted loans. Beck, Klapper, and Mendoza (2010) find that in most countries the government is heavily involved in the management of the guarantee fund. However, loan assessment and recovery are typically undertaken by the lenders whose loans are being guaranteed. This approach appears to promote the financial sustainability of credit guarantee schemes. Schemes in which the government chooses borrowers and recovers loans typically have higher loan losses than schemes in which the lender performs these tasks, possibly because lenders have greater experience with credit appraisal and recovery than government agencies and might have more incentives to perform these activities.

The international experience suggests that it might be more cost-effective to have lenders assess the creditworthiness of the borrowers that are being guaranteed, as lenders already have a credit appraisal infrastructure in place.[34] Moreover, loan appraisal by the guarantee scheme is likely to lead to a duplication of efforts between the scheme and financial intermediaries, because lenders are not likely to completely outsource screening of their borrowers to the scheme. The Korea Credit Guarantee Fund (KODIT), which appraises every

34. A similar argument could be applied to the case of loan recovery after default.

loan by itself, had operating costs of 7.7 percent of its guaranteed loans by the end of the 1990s (Honohan, 2009). Colombia's Fondo Nacional de Garantías (FNG) initially also appraised all loans in-house and had operating costs of 4.2 percent of the value of outstanding guarantees. It then switched to a system in which lenders can appraise most loans themselves, lowering operating costs to less than two percent of the guaranteed amount.[35] On the other hand, having the lender decide which new loans will receive guarantees might lead to excessive risk-shifting to the guarantee fund, as lenders might not have incentives to adequately screen those loans that will be covered by the guarantee. There are at least two ways of mitigating this problem. First, lenders with high default rates can be charged higher premiums. However, Beck, Klapper, and Mendoza (2010) find that only five credit guarantee schemes covered in their survey (out of 39) apply penalties in case of default.

A second tool for influencing lender's incentives is the coverage ratio, that is, the fraction of the value of an individual loan that the scheme guarantees. When the scheme guarantees less than 100 percent of the value of a loan, part of the credit risk remains with the lender. This helps align the incentives of the guarantor and the lender because it encourages the lender to carefully screen and monitor the loans that are covered by the guarantee scheme. Levitzky (1997) argues that to ensure an appropriate alignment of incentives lenders should assume at least 30 to 40 percent of the risk, and never less than 20 percent. On the other hand, there is a trade-off between lenders assuming a higher share of the risk and making the scheme attractive to them. Levitzky (1997) argues that guarantees with coverage ratios below 50 percent are not likely to be attractive for lenders. In practice, Beck, Klapper, and Mendoza (2010) find that 10 public credit guarantee schemes in their sample guarantee up to 100 percent of individual loans. The remaining 29 schemes in their sample guarantee up to 75 percent of each loan on average, with coverage ratios ranging from 33 percent to 95 percent.

Another important consideration when designing a credit guarantee scheme is how claims are processed. Costly and time-consuming claims procedures can reduce the transparency and credibility of the scheme and might discourage lenders from participating. Therefore, setting clear rules regarding when and

35. See de la Torre, Gozzi, and Schmukler (2015) for a brief overview of Colombia's Fondo Nacional de Garantías.

how to pay out guarantees, as well as paying claims without a long and costly verification process are important considerations. Green (2003) points out that in many developing countries, early guarantee schemes did not have clear conditions under which a guarantee could be claimed by lenders, leading to disputes between financial intermediaries and these schemes. He argues that introducing a time limit for the settlement of claims might increase transparency and also suggests making only larger claims subject to an extensive inspection before payment is made. Smaller claims can be processed without an ex-ante inspection and can be randomly verified ex-post, which speeds up the overall process.

Finally, another key design issue for public credit guarantee schemes is how to determine the fees charged for their guarantees. There are two separate considerations in this regard. First, how to structure these fees. Some credit guarantee schemes charge a flat fee that is the same for all types of guarantees. Other schemes charge fees that vary with the characteristics of the guarantee or the guaranteed loan. For example, Brazil's SEBRAE charges higher fees for longer maturity loans (Green, 2003). Colombia's FNG charges fees that increase with the coverage ratio.

The second consideration regarding fees is determining their overall level. In principle, if the credit guarantee scheme has any informational or enforcement advantage relative to lenders or a better ability to diversify risks, it should be able to charge high enough fees to fully cover its administrative expenses and credit losses, plus its opportunity cost of capital. On the other hand, if the public credit guarantee scheme addresses some market failures, this might justify some level of subsidization to lenders by charging fees that do not fully cover all its costs. In practice, most schemes charge annual fees of about two percent of the guarantee amount, which is usually insufficient to cover their operating costs (i.e. administrative costs plus credit losses) (Gudger, 1998; Green, 2003). This can affect the financial sustainability of public credit guarantee schemes, as discussed next.

3.2 Financial Sustainability and Impact of Public Credit Guarantee Schemes

The performance of public credit guarantee schemes in terms of financial sustainability has been mixed, at best. As mentioned above, most of these schemes cannot cover their operating expenses with their fee income. For instance, Beck, Klapper, and Mendoza (2010) find that, of the 15 public credit

guarantee schemes in their survey that report complete financial information, 11 have operating losses. The median public credit guarantee scheme in their survey charges 1.5 percent of the guarantee amount in fees, has administrative costs of nine percent, and has credit losses of five percent. Even if fee income does not fully cover their total costs, public credit guarantee schemes can in principle be financially sustainable, as they can make up for operating losses with the investment income from their guarantee funds.

If the investment income is insufficient, the guarantee schemes might require additional government support. Gudger (1998) reviews the performance of a large number of credit guarantee schemes around the world and finds that this has been the case for most schemes. Beck, Demirgüç-Kunt, and Honohan (2008) estimate that the Mexican government subsidizes its credit guarantee scheme each year at a rate of about two percent of the guaranteed loan amount. In the U.K., the same figure is around 15 percent. On the other hand, there are also examples of public credit guarantee schemes that are financially sustainable. Chile's FOGAPE covers all its costs through fee and interest income (de la Torre, Gozzi, and Schmukler, 2015). The SBA Section 7a program in the U.S. requires an annual subsidy of only about 0.1 per cent per of the value of outstanding guarantees (Beck, Demirgüç-Kunt, and Honohan, 2008).

The overarching question related to the impact of public credit guarantee schemes is whether they lead to *financial additionality*, that is, whether they generate additional loans for the targeted firms and/or allow them to borrow at better terms (e.g., longer maturities, lower rates), relative to what would have happened in the absence of the scheme. Given that the goal of credit guarantee schemes is to improve access to finance for certain groups of firms, their existence is difficult to justify if they do not lead to financial additionality. A further question is whether these schemes lead to *economic additionality*, that is, whether any increases in access to finance that they cause contributes to improving the performance of the supported firms (e.g., higher growth, investment, employment, innovation). An even more difficult question is whether these schemes generate positive spillovers and contribute to overall economic growth.

Accurately measuring financial additionality would require knowing whether the firms that participate in a given credit guarantee scheme would have been able to borrow (or under which conditions they would have been able to do so) in the absence of the scheme. This counterfactual is not observable. Most em-

pirical studies attempt to overcome this identification challenge by comparing firms that have benefited from guaranteed loans with similar firms that have not received guaranteed loans. Most of the existing studies find evidence of financial additionality. For instance, Larraín and Quiroz (2006) and Cowan, Drexler, and Yañez (2015) find that Chile's FOGAPE increased lending to micro and small firms. Similar evidence of financial additionality has been reported for the Small Business Financing Program in Canada (Riding, Madill, and Haines, 2007), the Special Credit Guarantee Program in Japan (Wilcox and Yasuda, 2008), the Small Firms Loan Guarantee in the U.K. (Cowling, 2010), and the U.S. Small Business Administration (Hancock, Peek, and Wilcox, 2007), among many others.

Despite this evidence of financial additionality, there is also evidence of sizable displacement effects and deadweight costs of public credit guarantee schemes. For instance, Benavente, Galetovic, and Sanhueza (2006) find that most firms that participate in Chile's FOGAPE had previously received bank loans and that a large share of guarantees has been allocated to the same firms over time. Zia (2008) finds that almost half of guaranteed loans in Pakistan went to financially unconstrained firms and estimates that this credit misallocation has a cost equivalent to 0.75 percent of GDP. Uesugi, Sakai, and Yamashiro (2010) find that the loosening of conditions for credit guarantees in Japan during the Asian financial crisis led to significant risk shifting, as banks replaced nonguaranteed loans with guaranteed ones to minimize their exposure to risky assets.

Evidence of economic additionality is scarcer, as there are fewer studies on the topic, likely due to the difficulties in gathering the required data and accurately identifying any real effects. Craig, Jackson, and Thompson (2007) find that the employment rate is higher in U.S. districts that receive more guaranteed loans. Oh et al. (2009) find that participation in public credit guarantee schemes in South Korea is associated with increased firm sales and employment growth, as well as higher wages and firm survival rates.

Although a growing body of empirical work has analysed the impact of credit guarantee schemes, this research faces significant limitations. The main challenge is the identification of an appropriate control group, as firms that do not participate in a given credit guarantee schemes might be systematically different from participating firms. When measuring financial additionality, a further difficulty is that lenders might substitute guaranteed loans for other loans and borrowers might switch across lenders from unguaranteed to guaranteed loans,

so that no additional lending might actually occur. Measuring economic additionality also raises some further difficulties. For instance, firms that receive credit guarantees and that grow due to the guaranteed loans could displace firms that did not receive the guarantees, with little or no aggregate effect on growth and employment. Further work is required to address these challenges and accurately identify the impact of credit guarantee schemes.

4. Conclusions

This paper provides a brief overview of the international experience with public credit guarantee schemes, which have gained popularity over the last decades. The evidence reviewed suggests that there is large heterogeneity along several dimensions across public credit guarantee schemes, making a rigorous comparative assessment particularly challenging. We conclude with a succinct discussion of some open questions about these schemes.

An important open question regarding public credit guarantee schemes is to what extent public sector intervention is warranted. Although these programs are usually justified based on some social objectives, the rationale underlying the choice of credit guarantees instead of other forms of government intervention is usually left unexplained. Several arguments have been put forward to justify the establishment of public credit guarantee schemes.

The first argument is that these schemes can address information problems in the long run by acting as subsidies for financial institutions to cover the initial costs of learning about a particular group of borrowers. Private financial intermediaries might lack incentives to incur the upfront costs of learning about new borrowers and devising the required lending techniques, as once their efforts prove successful others can easily reproduce them (Besley, 1994; Lapenu, 2001). In this situation, there might be a role for the public sector to foster innovation by subsidizing the initial costs of lending to a new group of firms. According to this argument, public credit guarantee schemes might be operated at a loss while financial institutions accumulate the required expertise and information. This argument implies that credit guarantee schemes need to be designed carefully to provide financial intermediaries with adequate incentives to set up the best technologies and to learn what really works, which

requires some degree of risk sharing between the scheme and lenders (Rodriguez-Meza, 2004). According to this argument, once financial institutions learn how to lend to the particular segment, they should be able to continue lending without further subsidies. This implies that subsidies should be temporary and the guarantee scheme should be phased out (or move on to a different target group of borrowers) once financial institutions have acquired the required experience and information. In practice, however, it might be difficult to determine when this is the case. Moreover, political incentives might make it quite hard to eliminate a credit guarantee scheme once it is established. As Vogel and Adams (1997) point out, there is no evidence of public programs that have been able to eliminate guarantees after a certain period. In addition, even if temporary subsidies to encourage lenders to venture into a new market are deemed necessary, it is not clear whether credit guarantees are the best tool for achieving this goal. Governments could, for instance, provide a direct subsidy to financial institutions for lending to firms in the target sector. In this case the public sector would face no credit risk. However, these direct subsidies would have to be designed carefully to ensure that they reach the desired targets and that they do not generate additional distortions.

A second line of reasoning often used to justify public intervention in credit guarantee schemes is that they can help mitigate principal agent problems. However, this argument only makes sense if the government has an informational or enforcement advantage over lenders, which is not typically the case. One exception could be providing funding to mutual guarantee associations, which have close knowledge of their members, but might not have sufficient capital to set-up a credit guarantee scheme on their own. In this case, government involvement should be limited to the provision of funding, given that the government is unlikely to have any advantage in managing the credit guarantee scheme. Moreover, public funding might exacerbate principal agent problems, as it could reduce the incentives of MGA members to monitor each other, given that fewer of their own resources are at stake.

A third argument that might justify public intervention in credit guarantee schemes is that the state has a natural advantage in dealing with collective action frictions and, as a result, it can spread risk more finely across space and time than atomistic agents (Anginer, de la Torre, and Ize, 2014). Arrow and Lind (1970) show that, when risk is spread in small amounts over large numbers of

agents, capital can be priced at risk-neutral prices. They argue that the state's inter-temporal tax and borrowing capacity gives it a unique ability to spread risk.[36] Thus, the state has an advantage in terms of risk bearing relative to risk averse private agents, and state guarantees (as opposed to subsidies or loans) are called for to encourage private investment or lending in the face of high risk or high risk aversion.

Even if there are relevant (theoretical) arguments for the establishment of public credit guarantee schemes, a still open question is whether these schemes are in practice cost-effective mechanisms for achieving the desired objectives. Answering this question requires at the very least showing that these schemes have financial and economic additionality. However, additionality by itself is not enough to justify the use of public funds; the relevant question in this regard is whether this additionality and any associated benefits compensate for or exceed the required government funding.

Rigorous cost-benefits analysis of these schemes would be desirable and they would need to be assessed against alternative government interventions. Of course, this is easier said than done. But governments could do a more systematic effort to facilitate ex-post assessment. This includes improving the availability of firm-level data and SME credit statistics and gathering detailed data on the firms that participate in these schemes. On the cost side, providing accurate accounting data on the expenditures and incomes of public credit guarantee schemes on a regular basis would be necessary to assess their performance and sustainability. To facilitate identifying the degree of subsidy that each program entails, the pricing of guarantees would need to be as transparent as possible, and governments might want to avoid bundling several services (e.g., credit and guarantees) together. To the extent possible, data should be shared with external evaluation units and the academic community to allow them to conduct studies and compare the additionality of different programs.

From a positive perspective, public credit guarantee schemes have some features that can make them politically attractive. First, as Honohan (2009) points

36. There is significant debate in the literature regarding the validity of the Arrow-Lind result that the social cost of risk tends to zero as the state spreads the risk associated with any investment project among a large population. Foldes and Rees (1977) argue that under a more realistic formulation of fiscal policy, this result only holds under very stringent assumptions and therefore the practical circumstances in which the Arrow-Lind conclusions apply are extremely restricted. Gardner (1979) shows that the Arrow-Lind results only hold if the investment risk is arbitrarily small.

out, the resemblance of credit guarantee schemes to market-based institutions can make them seem more legitimate in the eyes of the public than directed credit or loan subsidies, facilitating their establishment. Second, public credit guarantee schemes require relatively small cash outlays, at least initially before credit losses materialize, and can guarantee a large volume of loans with a comparatively small capital base. Once a credit guarantee schemes is operating, more government funding might become necessary if the scheme is not financially sustainable. However, governments might be able to conceal the true fiscal cost of the credit guarantee scheme for a politically sufficient duration through overoptimistic pricing and blurred accounting. This might make credit guarantee schemes attractive to opportunistic or self-serving politicians. However, the costs and contingent liabilities of these schemes could also be explicitly reported and analysed, as it happens in some countries.

To conclude, public credit guarantee schemes can constitute useful mechanisms for increasing access to finance for certain groups of borrowers. However, their success and financial sustainability hinge on proper design. The disappointing experience with many public credit guarantee schemes, especially in developing countries, suggests that getting the design right might constitute a significant challenge. Moreover, rigorous evidence on the impact of public credit guarantee schemes is still scare. There is a need for more in-depth evaluations that jointly take into account financial sustainability and additionality and that assess these schemes against alternative policy instruments.

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Questions & Answers

In this section three contributors address questions raised by the editors. These contributions investigate the role of public support in improving SMEs access to finance, for instance, by imposing conditionality clause in granting State aid to banks active in SMEs lending (Ayadi), or by providing SMEs with alternative financial instruments (Kraemer-Eis and Revoltella). The last section (McMurray) discusses the measures implemented in the UK to overcome informational barriers that limit SMEs access to finance.

Banks' bail-out and a conditionality clause on SMEs support

by Rym Ayadi[37]

Abstract

Despite the discount factor for SMEs lending introduced in the CRR directive, SMEs access to credit may still not be sufficiently enhanced. Also, this preferential weight may even raise a potential distortion of the risk profile of SMEs. This Q&A section discusses the alternative measures undertaken by EU member states to alleviate the funding constraints to SME lending by banks. More specifically, it investigates the role on Small Business Lending of a conditionality clause in granting State aid.

Introduction

Small and medium-sized enterprises (SMEs) are the backbone of the European economy. They are seen to provide the lion share of the added value and employment and they are the drivers of economic growth and innovation. Usually, many SMEs perceive getting finance as their most pressing problem to grow. They are in turn perceived by banks as opaque and risky, which in most of the cases justify higher risk premiums if they are granted loans. This is a direct consequence of the asymmetry of information that usually governs SMEs and banks relationship. The global financial crisis has put further strain

37. HEC Montreal

on on-going and new activities of all types of enterprises (small, medium or large) and raised serious doubts on the health of the European banking sector, which were not adequately capitalised when the financial crisis erupted. Most SMEs suffered dangerous dry ups of funds necessary to maintain their operations and essential cash-flow running and hence became even riskier than before. The reduced availability of bank loans, credit lines and overdrafts was one of the channels through which the financial crisis hit especially SMEs, which have been for long largely reliant on bank financing. During the crises, several policy and regulatory measures were deployed to alleviate funding shortage to SMEs.

Questions on the impact of the financial crises on SME funding and the role of public intervention

What has driven the decline to SME funding during the financial crisis?

As was evidenced in a recent research work I directed for the European Parliament in 2014[38], the deterioration of the financial health of European banks and the subsequent macro-economic woes in several EU countries have been largely detrimental to SMEs. The 2007-2009 global financial crises and the consecutive 2010-2012 euro area sovereign debt crisis exposed the banking sector to heavy losses and resulted in higher capital requirements making their business seemingly more expensive in a period where it was difficult to access capital. Such situation hampered their capacity to take risk and particularly risk to SMEs. The more prudent behaviour and restructuring plans imposed on banks by regulators that followed to help banks return to soundness led to a reduction of the loan volumes in general and more specifically to SMEs. In particular, the bank loan volumes decreased and the interest rates increased most in countries that applied for financial assistance from other EU Member States during the euro area debt crisis. In turn, the adverse economic conditions have also led to a reduction in demand for bank loans; but the reduction in available lending volumes seems to outweigh the shrinkage in demand.

38. Ayadi R., W.P. De Groen and P. Thyri (2015) "State aid to banks and credit to SMEs: Is there a need for conditionnality", European Parliament, 2015 (thereafter Ayadi et al (2015)).

What are the policy measures taken during the crisis to alleviate SMEs funding constraints?

I will emphasise the measures undertaken by EU member states to alleviate the funding constraints to SME lending by banks. The capital requirements regulation (CRR) 2012/648/EU[39] introduced a preferential risk weight for SMEs (Article 501) aimed at reducing the regulatory costs for SMEs. However, this might not be sufficient for banks to enhance access to credit to this category of enterprises and might even raise a potential distortion of the risk profile of SMEs. Indeed, as a result of the financial crisis, banks have largely suffered losses because of excessive risk taking in previous years on the so-called "toxic" assets, which has curtailed their capacity to lend to the real economy and hence motivated several governments to provide them with financial support in form of State aid.

Between 2008 and 2012, the financial sector has benefited from large amounts of State aid, amounting respectively to 39 % of the European Union's (EU) 2012 gross domestic product (GDP).[40]

Questions on the role of State aid in avoiding funding disruptions to SMEs

What is State aid and how does it work to save EU banks and avoid disruptions in SME funding by banks?

State aid is defined under Article 107 (1) Treaty on the Functioning of the European Union (TFEU)[41] and thus follows the legal assessment made by the Commission. It is assumed that the elements of the concept of State aid, i.e. (i) granting of an economic advantage, (ii) transfer of State resources, (iii) favouring of a certain undertaking (selectivity), (iv) distortion of competition as well as an (v) adverse effect on trade between Member States are present.[42]

39. Article 501, OJ L 176 of 27.6.2013.
http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2013:176:FULL:EN:PDF
40. See Ayadi et al (2015).
41. Article 107 (1) TFEU, OJ C 115 of 09.05.2008, pp. 91-92, *'1. Save as otherwise provided in the Treaties, any aid granted by a Member State or through State resources in any form whatsoever which distorts or threatens to distort competition by favouring certain undertakings or the production of certain goods shall, in so far as it affects trade between Member States, be incompatible with the internal market.'*
42. Vademecum (2008), *Community law on State aid*, European Commission Directorate-General for Competition pp 6-7.

Therefore, the State measures applied to EU banks fall under the realm of application of Article 107 (3) (b) TFEU[43], empowering the Commission to determine whether an aid can be seen as compatible with the Common Market or not. To that end, the first sentence of Article 108 TFEU envisages a system of obligatory *ex ante* notification to the Commission, further laid out and specified in the recently amended procedural regulation Nr. 659/1999.[44] In applying Article 107 (3) (b) TFEU, the Commission enjoys substantial discretion. Such discretion will allow the publications of communications to govern the application of State aid.

In the autumn of 2008, the Commission issued its '*banking package*' which was originally intended to give guidance to the Commission's temporary policy approach towards State aid in to the banking sector.[45] In July 2013, the Commission published the Banking Communication[46], which consolidates most of the

43. Article 107 (3) TFEU, OJ C 115 of 09.05.2008, pp. 91-92,
'3. The following may be considered to be compatible with the internal market:
(a) aid to promote the economic development of areas where the standard of living is abnormally low or where there is serious underemployment, and of the regions referred to in Article 349, in view of their structural, economic and social situation;
(b) aid to promote the execution of an important project of common European interest or to remedy a serious disturbance in the economy of a Member State;
(c) aid to facilitate the development of certain economic activities or of certain economic areas, where such aid does not adversely affect trading conditions to an extent contrary to the common interest;
(d) aid to promote culture and heritage conservation where such aid does not affect trading conditions and competition in the Union to an extent that is contrary to the common interest;
(e) such other categories of aid as may be specified by decision of the Council on a proposal from the Commission.'
Visual emphasis introduced by the authors.

44. Council Regulation (EU) No 734/2013, amending Regulation (EC) No 659/1999 laying down detailed rules for the application of Article 93 of the EC Treaty, OJ 2013 L 204/15, http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2013:204:FULL:EN:PDF.

45. Communication on the application of State aid rules to measures taken in relation to financial institutions in the context of the current global financial crisis ('2008 Banking Communication') (OJ C 270, 25.10.2008, p. 8, http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2008:270:0008:0014:EN:PDF); Communication on the recapitalisation of financial institutions in the current financial crisis: limitation of aid to the minimum necessary and safeguards against undue distortions of competition ('Recapitalisation Communication') (OJ C 10, 15.1.2009, p. 2, http://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX:52009XC0115%2801%29); Communication from the Commission on the treatment of impaired assets in the Community financial sector ('Impaired Assets Communication') (OJ C 72, 26.3.2009, p. 1, http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2009:072:0001:0022:EN:PDF); Communication on the return to viability and the assessment of restructuring measures in the financial sector in the current crisis under the State aid rules ('Restructuring Communication') (OJ C 195, 19.8.2009, p. 9, http://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX:52009XC0819%2803%29); Communication from the Commission on the application, from 1 January 2011, of State aid rules to support measures in favour of financial institutions in the context of the financial crisis ('2010 Prolongation Communication') (OJ C 329, 7.12.2010, p. 7, http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2010:329:0004:0005:EN:PDF) and Communication from the Commission on the application, from 1 January 2012, of State aid rules to support measures in favour of financial institutions in the context of the financial crisis ('2011 Prolongation Communication') (OJ C 356, 6.12.2011, p. 7, http://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX:52011XC1206%2802%29).

46. Communication from the Commission on the application, from 1 August 2013, of State aid rules to support measures in favour of banks in the context of the financial crisis ('Banking Communication'), OJ C 216, 30.7.2013, p. 1, http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2013:216:FULL:EN:PDF.

previous ones and sets out the up-dated EU crisis rules for State aid to banks during the crisis from 1 August 2013. It replaces the 2008 Banking Communication and supplements the remaining crisis rules. Together, they define the common EU conditions under which Member States can support banks with capital, asset relief measures, guarantees and other liquidity facilities. The main objective of the Commission is to safeguard the financial stability, meaning the prevention of negative spill-over's to other banks as well as ensuring that the lending to the real economy continues and hence avoid any funding disruptions to SMEs in Europe. In addition, the Commission sought to limit the distortion of the competitive environment, minimize the required tax payers' money and retain the single market.

When a financial institution receives State aid, the Member State has to submit a viability- or restructuring-plan for the bank. This plan sets out the conditions that the bank has to respect during the restructuring process. The Commission examines the plan based on five broad criteria entailed in the 2009 Restructuring Communication:[47]

The 2007-2009 global financial crises and the subsequent 2010-2012 euro area sovereign debt crisis forced EU Member States to undertake bold actions. After a long period with barely any bank rescues,[48] EU Member States committed between 2008 and 2012 in total EUR 5.1 trillion (equal to almost 40 % of 2012 EU GDP) of State aid. The State aid granted to European banks during the crises can be divided across four broad types; recapitalisation, asset relief measures, guarantees and other liquidity measures.

1. The first form of State aid is the **recapitalisation** of banks. Governments provide funds to banks in exchange for equity instruments, including normal shares, preferred shares and hybrid capital. This measure strengthens the capital position of banks. In addition, the recapitalisation can deliver the government the control over the bank. A public body obtaining control over a bank itself is not considered State aid.

47. Community guidelines on State aid for rescuing and restructuring firms in difficulty, OJ C 244, 01.10.2004, p 2-17; Latest prolongation OJ C 296, 02.10.2012, p. 3, http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2012:296:FULL:EN:PDF.

48. *'The most well-known ones are the Crédit Lyonnais case and the German regional banks [resp. Landesbanken] ruling. In the case of Crédit Lyonnais, the European Commission decided in 1995 that Crédit Lyonnais, in return for the green light on the EUR 6.9 billion (FF 45 billion) in State aid, had to reduce its commercial operations abroad, including a substantial part of its European banking network, by at least 35 % by the end of 1998. In the German Landesbanken case, the European Commission agreed with the German government in 2001 to phase out the system of State guarantees for the regional savings banks in 2005 ('Landesbanken') and distinguish between the public policy and purely commercial tasks of these institutions'*, Lannoo and Napoli, 2010.

2. Second, governments also carve out impaired and toxic bank assets. The provided **asset relief** can help banks to reduce the uncertainty about the value of their assets and limit the impact of temporary losses due to illiquid markets. The asset relief measures contribute to re-gaining access to liquidity, deleveraging and reducing the capital consumption. Moreover the schemes must be justified to taxpayers when public money is used to guarantee the bad assets.[49]
3. Third, governments **guarantee bank liabilities**. Besides the deposits covered under deposit guarantee schemes**,** governments can also specifically guarantee newly issued bonds. The guaranteeing of newly issued bonds allows banks to raise new funds or rollover old liability instruments.
4. Fourth, besides guarantees some Member States also provide **direct liquidity** to ailing banks and other systemic financial institutions that faced problems obtaining funding. The direct short-term facilities mostly contained loans.

Besides through State aid European Banks also received liquidity assistance from central banks. Although the central banks are public institutions most of their funding of the banking sector is exempted from State aid requirements. Hence, instruments related to monetary policy are exempted, while support for a specific institution can be considered State aid (e.g. Emergency liquidity assistance - ELA). Though, in most cases this liquidity support is also exempted, as long as the bank is solvent, the liquidity support is fully collateralised, a penalty interest rate is charged and the initiative for the measure stems from the central bank.[50]

Through which channels could in general granting State aid to banks influence the access of SMEs to finance?

Not all banks managed to absorb the losses and fulfil the higher capital requirements. The EU Member States intervened, providing capital, asset reliefs, guarantees and liquidity measures to ailing banks to safeguard financial stability and avoid the consequences of the breakup of the lending chain,

49. OJ C 72 of 26.3.2009, http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2009:072:0001:0022:EN:PDF.
50. OJ C 270, 25.10.2008, p. 8, http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2008:270:0008:0014:EN:PDF

which can be detrimental to the real economy and to SMEs. In exchange for State support the aided banks had to fulfil certain conditions. Albeit the (below-market price) remuneration for the obtained support, the banks that received State aid were also obliged to restructure to limit distortions to competition and to become long-term viable. The case-specific restructuring plans could, for instance, include conditions to sell or cease parts of the activities, to merge with other healthier banks but also to apply lending targets (in particular to SMEs) and bans on acquisitions, price- leadership (price setter) coupon-, dividend- and bonus payments and to abide by other types of restrictions such as advertising.

Did State aid to financial institutions actually impact the SMEs' access to finance?

As was evidenced in our research, in countries experiencing economic woes and where the financial sector needed more State aid SMEs access to finance took the largest hit, both in terms of volumes and interest rates. In addition, the bank intermediation in countries where banks had relatively higher risk costs and less capital were significantly less performing, while the opposite is true for countries with better economic conditions. On the other hand, loan guarantees, which are loans guaranteed by national guarantee schemes did not seem to lead to a better bank loan intermediation towards SMEs during the crisis years. In fact, loan guarantees under national schemes are too limited and concentrated in just a few countries (e.g. France and Italy) to allow a comprehensive assessment. Therefore more research on this topic is needed.

What role did credit to SMEs play in the decisions to grant State aid?

When looking at State aid decisions on 46 banks in 15 Member States during the crisis years (2007-2012), we found that on the one hand, lending to SMEs played a role in the decision to grant State aid. Indeed, avoiding that the bank-lending channel would be broken was one of the motivations to grant State aid. This is a key dimension to avoid disruptions of funding the real economy. On the other hand, many restructuring plans had an impact on lending to SMEs either directly via imposing hard or soft lending targets and price leadership bans or indirectly via general bans on price leadership and restrictions on new or dismantling of existing activities.

Would a conditionality clause for granting State aid to banks subject to providing access to credit be legally possible?

Lending to SMEs could be legally justified as a condition to State aid under the existing legislation. Article 107 (3) (b) of the Treaty on the Functioning of the European Union (TFEU) allows for the assessment of the compatibility of State aid with the Internal Market and provides the European Commission with sufficient possibilities to approve SME lending targets to prevent a credit crunch and disturbance to the real economy.

Would a conditionality clause for granting State aid to banks subject to providing access to credit be economically justified?

Based on our research, when applied conditionality can have a significant impact on the lending activities of banks, but seems not to contribute to more lending to SMEs by banks. Generally, the ailing banks that received State aid on the condition that they restructured, liquidated or to be nationalised, displayed lower SMEs loan growth compared to other banks that did not benefit from State aid. More specifically, the analysis displayed in our research focuses on conditions, both on the relative price levels and lending volumes, which are the two channels to directly influence lending to SMEs. Hence, aid recipient banks that had to abide to minimum SME-lending targets recorded significantly lower growth in total customer loans than banks that did not have to fulfil any lending target or for which maximum targets are applied. These banks are most probably suffering the restructuring plan internally and hence were incapable of adding further risk into their balance sheet. SMEs are by definition more opaque entities and display generally a higher risk profile than other asset classes. The results for banks that had to comply with general lending targets are ambiguous and not significant. Moreover, the banks that were not allowed to be price leader in standard products in general quoted lower loan growth rates. While for banks with price-leadership bans in SMEs products the results were ambiguous, but also not significant. These results show that ailing banks recipient of State aid fail to maintain and/or increase funding to SMEs. In contrast, State aid to banks could have achieved lesser financial instability and disruption on the system level. This hypothesis was not tested in our research. Finally, we showed that sounder banks that are more retail-oriented, that generally display more liquid funds, higher regulatory capital and lower market funding are expected to sus-

tain lending to the real economy[51]. In addition, higher economic growth and liquidity provisioning by central banks contribute to higher loan growth, which confirms that the action of the ECB were beneficial to sustain lending to SMEs.

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Ayadi R., De Groen, W.P., and Thyri, P., 2015. State aid to banks and credit to SMEs: Is there a need for conditionality, European Parliament, 2015

51. See Ayadi, R. Et al (2015), "Business Models Monitor in Banking, Europe 2015", International Research Centre on Cooperative Finance (IRCCF), HEC Montreal, Forthcoming.

Tackling SMEs asymmetric risk: the EIB Group approach

by Debora Revoltella and Helmut Kraemer-Eis [52]

Abstract

Limited access to finance is still a major concern for many European SMEs, and tighter regulatory capital requirements, as well as the accumulation of non-performing loans, have strongly reduced banks' capacity to extend new lending. This Q&A section discusses which measures are effective in improving banks' risk taking capacity and in providing SMEs with alternative financial instrument. Also, this section provides a useful insight into the EIB Group (EIB and EIF) activities in supporting SMEs access to finance.

Questions on the role of SMEs and SMEs financing

What is special about SMEs financing?

Small and medium-sized enterprises (SMEs) are commonly known as the backbone of the European economy. In the European Union (EU)'s non-financial sector, more than 21.6m of SMEs accounted for 99.8% of all non-financial enterprises, employed 88.8m people (66.9% of total employment) and generated EUR 3.7tn in value added (58.1% of total value added), (European Commission, 2014).

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SMEs have been severely affected by the economic crisis; they face weak demand and heightened uncertainty at a time when the lending and risk-taking capacity of banks, their main source of external finance, has deteriorated. In fact, access to finance and the cost of finance are generally serious concerns for SMEs, more so than for larger enterprises - this is not only a result of the current crisis, but also reflects general market failures. The real creditworthiness of an SME may often be underestimated because of, for example, an "information gap" between lender and borrower.

Despite improvements, according to the latest ECB survey (SAFE, ECB 2015a), access to finance remained the most pressing problem for a significant fraction of SMEs (11%). Moreover, large national disparities persist, with access to finance reported to be a pressing problem in countries such as Greece, Ireland, Italy, the Netherlands, Portugal and Spain. Tighter regulatory capital requirements and the accumulation of non-performing loans have strongly reduced banks' capacity to extend new lending.

Questions on the issue of non-performing loans

Is the issue of non-performing loans crucial in Europe today? Will European banks be able to face the challenge without public support or some forms of public/private coordinated actions? Would it be possible to promote the creation of a European market for non-performing loans?

Banks need to improve their risk-taking capacity and their room for new lending, by increasing their ability to resolve or dispose of non-performing loans. To do this, a range of complementary efforts are needed that include addressing deficiencies in national regulations and institutions, enhanced technical expertise to deal with asset quality issues, and the development of effective markets for non-performing loans (NPLs).

As a consequence of the financial crisis and prolonged economic weaknesses, the euro-area banking sector has been heavily suffering from high levels of impaired assets. The ECB's calculations show that the level of non-performing exposure (a standardized risk-weighted measure of impaired on- and off-balance exposure) was above 10.5 per cent of total banking exposure at the end of 2014. Write-off rates remain low by international standards, and

are less than a quarter of that in the United States. Limited capital buffers and low profitability constrain banks' capacity to clean up their balance sheets. Legislative bottlenecks and accounting rules may further delay timely loss recognition. Also the lack of a well-functioning market for distressed assets, and costly enforcement and foreclosure procedures, complicate the disposal of impaired assets.

Currently, credit growth remains particularly slow in countries where banks report a high level of NPLs, insolvency procedures are weak, and the effectiveness of enforcement is low. NPL resolution would allow the debt of viable firms to be restructured (including needed equity injections), while hastening the winding-down of unviable firms. This would permit capital to be allocated to the most productive investments, providing a further spur to growth. It has been widely argued that high NPLs undermine the capacity of banks to support the economic recovery (see for instance Kashyap et al. (1994)) as they adversely affect banks' capital positions and substantially raise their funding costs, thereby resulting in higher lending rates and lower credit growth. In addition, persistent high NPL levels have an effect on an unresolved corporate sector debt overhang, which depresses the demand for investment. In the absence of debt restructuring, over-indebted companies have little incentive to invest because any return is used to service their current stock of debt. Based on firm-level data for 2000-2011 in the euro area periphery, Goretti and Souto (2013) investigate the macroeconomic implications of high corporate debt. Their results point to a substantial negative effect of the debt overhang on firm investment.

The decision on how to tackle NPLs is critical, as it implies redistribution of wealth. Legal and regulatory incentives to persuade banks to deal with the NPLs issue are crucial. At the same time, a number of different approaches have been used in the EU for targeted NPL resolution, ranging from measures which leave impaired assets on bank balance sheets (managed by an internal bad bank) to the creation of publicly owned asset management companies. Some countries, for example the UK, have used a combination of these approaches.

Going forward, the room for direct policy intervention seems to rely more on generating the right incentives and align initiatives. Developing a well-functioning market for distressed debt in Europe could do much to reduce banks' exposure to NPLs. From 2010 to 2013 European NPL sales increased from EUR

11bn to over EUR 60bn, but trade-volumes still amount to only a small fraction of NPL assets. Additionally, the transactions are still dominated by few markets, including the UK, Ireland and Spain.

Many international organisations have recognized the NPL problem. The IMF has taken a number of steps within the Article IV Consultation framework to highlight some of the regulatory bottlenecks in Cyprus, Italy and Slovenia. It has also presented a holistic approach to resolve the problem in the form of consultation documents and round-table debates (see for instance IMF, 2015b, EIB 2014b). The ECB is also monitoring the recent NPL developments in the euro area, enhancing a debate on the most efficient resolution mechanisms. The Vienna Initiative has intensified NPL resolution actions in a number of CESEE countries, including Hungary, Slovenia and the Balkan states (EIB, 2014a). More can be done and realignment of actors and interests is crucial.

Are there other ways to improve banks risk taking capacity and allow a diversification of risk out of the banking sector?

Bank financing can also be revitalised through instruments that enhance banks' ability to lend – in particular through securitisation and loan guarantees.

SME securitisation - a topic we can only brief touch here - effectively creates a secondary market for SME loans, enhancing the ability of banks to lend to SMEs. European SME-loan-backed securities have performed well, despite the crisis, but this instrument remains severely underutilised. Various initiatives, including those by the EIB Group, aim to remove current hurdles and catalyse the revival of high quality SME securitisation. A more positive stance on securitisation by regulators and the introduction of the ECB's Asset Backed Securities purchase programme are promising, but more has to be done to revive this market – in particular a pragmatic definition of high quality securitisation is needed (and this definition should include SME transactions).

Credit guarantee schemes (CGS) are another institutional arrangement to enhance banks' risk-taking capacity through risk sharing. CGSs provide partial guarantees on loans by covering a share of the default risk against a fee, they are provided by national governments, private entities or international financial institutions (EIB, 2014c).

CGSs are primarily used to alleviate constraints in access to finance for SMEs. Banks are often reluctant to extend uncollateralised credit to SMEs, even

at high interest rates, partly due to the high costs of obtaining information on the real credit quality of small and/or young enterprises. As a result, SMEs may fail to obtain the necessary financing even for viable projects. From a theoretical viewpoint the most commonly cited explanation for this SME financing gap is the asymmetric information that, combined with uncertainty, leads to credit rationing as agency problem. SMEs are more affected by credit rationing than larger companies due to the more pronounced information asymmetry (less information available, higher monitoring costs (relative to the loan amounts)). Moreover, the company age plays a role – by nature, young companies (which are typically small) neither have a long track record nor a credit history - and this increases the issue of asymmetric information for them (Kraemer-Eis, Lang and Gvetadze, 2015).

While the use of collateral can be an effective solution for alleviating credit rationing, collateral is not always available, and its use may have some drawbacks – e.g. its use might also increase transaction costs (legal and other administrative procedures). Under such circumstances CGSs can help closing the financing gap by substituting collateral with credit protection provided by an external guarantor. Typically, CGS are based on public support, or depend on it – there are some private sector initiatives, such as guarantees provided by the mutual Confidi schemes in Italy and private insurance group COFACE in France, but even such schemes tend to benefit from public counter-guarantees.

The need for public involvement in the establishment and funding of CGSs is justified by market failures based on the above mentioned issues (asymmetric information, uncertainty, agency problems), and is intensified by coordination failures among private-sector entities that, under certain circumstances, prevent them from pooling resources. When lenders are risk averse, efficient private sector provision of guarantees may not occur due to collective action problems, i.e. although the stakeholders are aware of the problem, no one does anything about it, as the private interests do not coincide with those of society. The state can be able to resolve the collective action problem that gets in the way of risk spreading.

During a downturn banks' capital and liquidity positions are generally weakened, leading to reduced availability of credit across the economy. At the same time, heightened uncertainty increases the adverse selection and moral hazard problems embedded in SME lending. Borrowers' default probabilities increase

and in parallel, collateral values decrease. All these factors contribute to increasing the financing gap for SMEs, resulting in the potential for economic welfare enhancements through public sector intervention in the form of guarantees.

To fulfil their policy objectives, CGSs must be adequately priced and structured, and ideally the risk reduction they provide should be adequately reflected in regulatory capital relief – and in an integrated banking market such regulatory treatment should be homogeneous. Low cost guarantees give rise to moral hazard, undermining lenders' incentives to monitor and select projects efficiently. A well designed CGS should ensure that risk is shared with the private sector.

The use of credit guarantees has been increased during the crisis in many countries. According to AECM, in terms of total volumes Italy, France, Germany and Spain are the largest guarantee markets in the EU. Collectively these four countries account for around three-fourth of total outstanding amounts. Relative to GDP the highest volume of guarantees is currently provided in Italy (2.1%) followed by Portugal (1.7%), Hungary (1.3%) and Romania (1.1%).

Questions on the role of institutions in developing a SME securitization market

Information asymmetries, risk taking, risk diversification. How to induce arm's length investors to buy SMEs equity and debt?

Part of the solution to banks limited risk taking capacity is to develop more diversified sources of finance and alternatives to loan financing, accessible for Europe's SMEs. This calls for further development of existing instruments like Europe's markets for external equity. These financing forms are not to be seen as a substitute for traditional, mainly bank-centred, SME financing instruments. Rather, they serve a specific and small group of SMEs, which is, however, very relevant for the innovativeness and growth of the overall economy. This is particularly true for venture capital (VC), which is a sub-segment of private equity (PE) that is typically provided to new or young enterprises with high innovation and growth potential.

Compared to the well-developed US market, where VC investments represented 0.3% of GDP in 2014, European venture capital is still lagging behind (EUR 4.1bn in 2014). The recent crisis has even increased the gap between the

two geographies, as the share of VC investments in relation to GDP shrunk from 0.05% in 2008 to 0.02% in 2014 in Europe.

Although European VC has somewhat recuperated from the crisis, the recovery in VC investments, fundraising and exit markets (all well below pre-crisis levels) has by far not been that strong than what has been observed for the overall private equity market over the last years, which was, however, to a large extent driven by buyout deals for larger companies. Government agencies accounted for 35% of total VC fundraising in 2014 (data from EVCA), which shows a continued counter-cyclical support and helped to stabilise the markets in the current crisis.

Some of the gap left by the slump in VC investment after 2008 has been filled by business angels. Mason and Harrison (2013), e.g., show for the UK that angel investment activity has held up since the onset of the crisis and they emphasise the economic significance of this market segment. Business Angels represent an important investor class and primarily consist of high-net-worth individuals. They typically invest their own money, either individually or in formal or informal syndicates, in businesses which are not publicly traded (see for more details: Kraemer-Eis, Lang and Gvetadze, 2015 and OECD, 2011.)

In addition to equity-type financing solutions, emerging alternative financing sources like non-bank lending, minibonds, private placements, marketplace lending, or microfinance solutions (the latter with a stronger focus on "social lending") can help improving SMEs' access to finance. Minibond markets, for example, are emerging in several countries – but most of the transactions are related to mid-sized companies rather than "real" SMEs. One example is the Italian mini-bond market that is developing since 2012 after the introduction of the "minibond law". Another example is the German market, however, in this case with a mixed experience - due to a series of defaults. The increasing number of debt funds and initiatives in the area of institutional non-bank lending are as well market-driven responses to fill bank financing gaps and to diversify financing possibilities of SMEs as complementary approaches to traditional bank loans. Many of these initiatives are as well "co-productions", i.e. cooperation between the banking sector and alternative financing sources, e.g. insurers (see for more details: Kraemer-Eis, 2014).

Better developed capital markets across Europe would help improve the resilience and efficiency of Europe's financing structures in the longer term

and the European Commission's (EC) proposal for a Capital Markets Union are going in the right direction. But we also need a strong, efficient and resilient banking sector in Europe – also after the crisis banks will remain the main provider of external financing for SMEs. The implementation of the Banking Union is a big step forward, with a process of clean-up and recapitalisation already taking place to a large extent.

What is the EIB Group doing to support SMEs access to finance?

The European Investment Bank (EIB) is the European Union's bank; it is the only bank owned by and representing the interests of the European Union Member States. The EIB Group consists of the EIB and the European Investment Fund (EIF) – the specialist arm providing SME risk finance (incl. guarantees and securitisations). The EIB is the majority EIF shareholder with the remaining equity held by the European Union (represented by the European Commission) and other European private and public bodies.[53]

Supporting SMEs and midcap finance is one of the four public policy goals of the EIB Group and represents the Bank's single largest policy priority in terms of activity volume (see for details EIB Group, 2015). Access to finance for SMEs can be strengthened through various instruments that either enhance banks' ability to lend or provide complementary sources of financing. In a continuously challenging macroeconomic environment, in 2014, the EIB Group's support to SMEs amounted to a record of EUR 28.1bn (new operations signed), of which EUR 24.8bn from EIB and EUR 3.3bn from EIF. With these commitments, the EIB Group estimates leveraging at least EUR 63.6bn of finance for SMEs.

Over 290k SMEs employing approx. 3.9m people received support through the EIB Group in 2014. The Group provides an increasingly wide range of predominantly intermediated debt-financing, risk-sharing products (guarantees, securitisation) and private equity/venture capital/growth capital instruments, enabling continued access to finance for SMEs. The Group intensified the collaboration with the EC and launched a new generation of financial instruments in favour of SMEs and midcaps. They include Horizon 2020 InnovFin -

53. For more information please refer to www.eib.org and www.eif.org.

EU Finance for Innovators, the EU SME Initiative[54], and risk sharing products under Competitiveness of Enterprises and SMEs (COSME), implemented by EIF. Moreover, the Investment Plan for Europe, a joint EC / EIB Group initiative, supports risk finance for SMEs and should unlock investments EUR 75bn for the benefit of Europe's SMEs and mid-caps.

Since the start of the financial and economic crisis in 2008, the EIB Group has responded to Europe's call to support the troubled economy by increasing its activities significantly – also based on capital increases of EIB and EIF. The EIB Group continuously works to strengthening its support for SMEs and midcaps and heightened cooperation with the EU Member States and public promotional institutions to establish tailor-made innovative financing facilities for SMEs and midcaps to help maximise resources. Furthermore, the Bank's advisory services complement the finance activities for the benefit of SMEs.

Rationale for the intervention

As outlined in more detail in Kraemer-Eis, Lang and Gvetadze (2013), efficient markets do not require public intervention. However, as also discussed above, there are market imperfections affecting SME finance that are serious enough to warrant public intervention. This intervention to mitigate the "bottlenecks" must be conditional upon ensuring "additionality," i.e. not crowding out private activities, but rather serving as a catalyst for the entry of private capital in order to create self-sustainable markets in the long run (Pelly and Kraemer-Eis, 2011). Public support must improve the conditions for entrepreneurship and the overall business climate for SMEs without distorting efficient market forces.

Given the diversity of the European SME population (i.e. in terms of size, sectors, age, growth model) – there is as well a diversity concerning external financing needs among this population in terms of instruments (equity, debt, mezzanine), and also with regard to the appropriate financing sources and

54. InnovFin consists of a series of integrated and complementary financing tools and advisory services offered by the EIB Group, covering the entire value chain of research and innovation with a wide range of equity, debt and guarantees products. Financing is either provided directly or via financial intermediaries. COSME improves access to finance for SMEs through two financial instruments: the Loan Guarantee Facility and the Equity Facility for Growth, both implemented by EIF via financial intermediaries. For more information please refer to the websites, mentioned in the previous footnote.

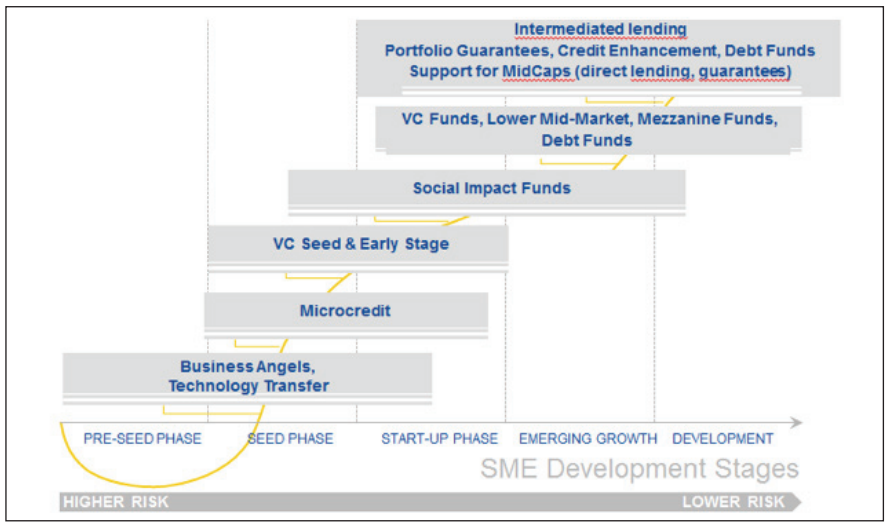
channels (traditional banks, equity funds, microfinance institutions, guarantee schemes, non-bank-lending sources etc.). Consequently there is no "catch-all" policy instrument to support SMEs; instead, a toolbox of targeted instruments has to be applied. We also claim that this toolbox must be continuously reviewed and possibly adjusted, depending on markets' needs (Kraemer-Eis, Lang, and Gvetadze). Consequently, the range of EIB Group instruments develops over time and the different EIB and EIF instruments are designed to play complementary roles. These instruments can have the objective to mitigate permanent market weaknesses in traditional financing channels, others are designed to develop or kick-start alternative ways of financing. Moreover, products and product-combinations can (and have to) change over time – for example, to enhance lending to SMEs, the provision of long term funding by EIB for banks was key in particular at the peak of the crisis – later-on more and more demand for risk sharing or joint products emerged, as combination of long-term liquidity provided by the EIB and risk sharing via the EIF and its long-standing market experience in providing guarantees for SME portfolios.

The classic lifecycle graph below outlines indicatively the existing areas of intervention by the EIB Group in the financing of SMEs. More 'traditional' instruments are in particular intermediated loans (EIB) as well as guarantee- (EIF) and securitisation- (EIF & EIB) solutions to mitigate credit rationing in bank lending (and covering a high number of small businesses). On the equity side there were - and are - Venture Capital solutions in order to support the development of the comparatively young European VC market (and covering a rather small number of highly innovative companies). Over time, additional instruments have been added, like technology transfer (to support the commercialisation of Universities' research know how) and Lower Mid-Market activities, as well as mezzanine instruments in order to meet increasing market needs in between debt and equity instruments, in particular for companies in special situations (like strong growth phases).

Newer instruments by are, for example, the support of microfinance (in Europe) as a reaction to the social crisis (resulting from the economic crisis). Moreover, social entrepreneurship is facilitated via Social Impact Funds activities. Another example is the support of Business Angels – to complement support measures in the VC space and as a reaction to mitigate weaknesses in the Venture Capital market and to incentivise alternative investors)., Further-

more, portfolio guarantees to the benefit of innovative SMEs have been successfully introduced to foster innovation. Another recent development is the support of debt funds – in order to encourage the development of alternative financing sources (alternative lending, minibonds). Other recent examples are targeted intermediated loans and tailor made initiatives supporting SMEs' internationalisation, or pilot projects in the field of peer-to peer lending.

Figure 1: The EIB Group's product range for financing small businesses[55]



It is well-recognised that governments and public institutions play a very important role in creating a better environment for financing business, but in this context it is important to mention that, it is just as important to realise that public support alone cannot be the only solution – it needs to play a catalytic role to attract private financing and to crowd-in private investors (Kraemer-Eis, Lang, Gvetadze, 2013).

55. On purpose, debt funds are mentioned twice as they can either have a form that is closer to securitisation transactions (based on diversified portfolios, but not tranched), or a form that is closer to private equity (based on non granular portfolios).

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Market solutions for SMEs lending in the UK

by Lindsey McMurray [56]

Abstract

This Q&A section starts with the description of the impact of bank regulation on SMEs lending, stressing the urgency of dealing with the issue of Non-Performing-Loans. It then discusses the solutions adopted, and their working mechanism, in the UK to overcome the informational barriers that limit SMEs access to finance.

Questions on the reform of bank regulation and SMEs' financing

Will new regulations reduce the incentive for banks to finance SMEs (e.g., risk weighting)?

Recent European proposals will result in increases in risk weight for SME lending. Ultimately the cost of the additional capital that will require to be held by lenders will result in an increase in cost of debt for such entities, otherwise, it will be value destructive for the lending banks and will not be sustainable in the longer-term. However, one of the main challenges in lending to SMEs is that they are inherently heterogeneous and therefore require more in-depth analysis to understand sufficiently well to assess their creditworthiness. As they do not lend themselves to standardized methods, it makes it more costly for banks (or any lender) to offer a lending service to SMEs if the bank is to conduct its activities

56. Pollen Street Capital

safely and soundly. Attempts to standardize the approach through credit scoring systems go some way to standardizing the approach but there are fewer opportunities to remove judgment and experience completely and hence cost of the underwriting process is greater. This cost will necessarily be passed on to the SME borrower. New tools are being created that permit standardization of analysis of information from SMEs. These will go some way to reduce the cost of underwriting and hence the cost of debt but are unlikely to remove judgment completely.

Will some sectors and/or countries suffer more than others from the impact of new bank regulations on SMEs' financing?

Those businesses that do not have real estate or other tangible assets with readily realizable value may find it more difficult to attract funding. The use of specialist equipment and machinery in the manufacturing sector could make it more difficult to attract debt funding also.

Will European banks be able to face the problems of non-performing loans without public support or some forms of public/private coordinated actions?

Loss rates in lending to SMEs are significantly higher than those related to other forms of lending e.g. real estate or consumer debt. There are three main ways to address this:

1. Conduct significant in-depth analysis so that only the best SMEs are granted credit. This is administratively expensive and excludes the vast majority of SMEs from access to credit;
2. Increase the cost of debt to fund the higher loss ratio
3. Or, public support through guarantees for the losses such that the public sector is subsidizing the true cost of debt to the SME community.

However, there is a question as to whether this is sustainable in the long term. In many cases the SMEs require equity capital rather than loans where they cannot meet the payment terms and fostering and supporting an environment where equity capital is available for SMEs may be a more sustainable solution long term.

Would it be possible to promote the creation of a European market for non-performing loans?

The market for NPLs is extremely international already. The key players have European and, often, international, franchises and they are able to apply

their skills and knowledge to different jurisdictions where the returns are sufficiently attractive to attract the capital and resources.

Questions on information asymmetries, risk taking, risk diversification and the role of the public sector

Is there a corporate governance problems for SMEs, limiting the willingness of arm's length investors to buy their equity and debt, and can they be solved with adequate policy interventions?

Low levels of corporate governance can be prevalent in SMEs due to the historic ownership of these entities. In many cases, individual founders, family members have created the businesses with limited focus on standardization or transparency of information. In some respects, the lack of standardization of information is as much of a hurdle as lack of transparency. New tools are being created that will enable banks and other financial information to extract data from SMEs on a standardized basis. This would enable external investors to have greater confidence in the information provided and it will be more efficient for them to analyse between companies. Formalisation of corporate governance could improve the quality of information from SMEs but it will come at a cost to the SME directly and this has to be assessed against the improvement in funding that could be achieved.

What might be the role of the public sector and of collective guarantee schemes in reducing information asymmetries and/or riskiness?

Collective guarantee schemes can certain increase the funding into certain markets. They can enable banks and other lenders to expand their risk appetite and to adopt a less selective or prescriptive approach in the absence of information or information in a standardised form.

Are small banks better at financing small firms?

There is no inherent advantage that small banks have to understand SMEs over large banks. However, given the non-standard nature of SMEs, it can be the case that smaller banks have a more familiar and personal approach which enables them to understand the particular aspects relevant to an SME

that enable them to make an individual judgement that is appropriate for the SME. The question is always how to scale the availability of credit to SMEs in a way that is cost efficient to deliver.

Questions on SMEs' alternatives to loan financing and the role of banks in promoting the market for equity and debt

What alternatives to bank financing of SMEs (trade credit, venture capital and new sources of funding such as peer to peer lending and crowd funding)?

There are a number of sources of lending being created that offer an alternative to bank lending, but each of them have the same challenge of how to efficiently assess entities which are inherently heterogeneous. These new platforms do offer funding where the banks will not do so, but such lending does come at higher than "standard" bank terms. They are charging rates that reflect the true cost of assessing SMEs and of the loss rates associated with such lending.[57]

In the UK there are a considerable number of emerging alternative lending businesses. These comprise peer-to-peer platforms as well as non-bank lenders, and offer a broad range of products types including unsecured and secured term loans, invoice finance, asset finance, trade finance, merchant cash advance, and other specialist forms of finance such as pension-led funding.

Where the SME is borrowing for short term working capital purposes, typically where funding is required in a matter of days, interest rates offered by lenders such as Iwoca, Ezbob, Fleximize, and Capital On Tap are typically 2-7% per month. Whilst these solutions are neither designed to be nor typically used as longer term financing options, borrowing at such high rates can still be economic for the SMEs. It enables them to cover short term adverse swings in cash flow, or meet payroll and other required expenses, without the need for further equity capital.

Several new specialists, such as those mentioned above, are attempting to use technology to overcome some of the traditional barriers to SME lending. These firms draw upon new sources of information on business performance that are instantly available, and subsequently can make rapid and more automated lending decisions. These information sources may include governmental divisions

57. See Figure 1 for a detailed list of institutions active in the UK SMEs loan market.

such as HMRC and the land registry, ecommerce companies such as PayPal, Amazon and eBay, and other information and analysis providers such as credit reference agencies or other service providers such as Yodlee. These sources are all capable of transmitting data on SMEs rapidly to the lender (with the SME's permission) in a standardised format, to enable the lender's decision. By utilizing technology in this way, in both data gathering, analysis, and underwriting, lenders are becoming able to reduce the overall cost of making a lending decision through increased process efficiency.

These new institutions are regulated by the Financial Conduct Authority (FCA), which introduced legislation limiting the rate that could be charged on "high cost shorter term credit", set at 0.80% per day.

In cases where loan terms are longer and the funds are not required within a very short time period (thus allowing for a more detailed underwriting process), rates are generally available in the 7-15% per annum range on an unsecured or secured basis from non-bank lenders including Funding Circle, Funding Knight, GLE, Growth Street and OakNorth. This compares to rates of c.3-5% over LIBOR for SMEs managing to obtain finance from a major UK bank (source: Bank of England).

These specialised institutions operate differently than standard banks as, generally, they will accept risks that the standard banks won't, for example smaller or newer companies, or companies with less stable financial profiles, in exchange for higher interest rates. They are mostly online offerings backed by a call centre team, due to the reduced need (or ability) to incur overheads associated with large scale branch operations.

Are there regulatory impediments to the development of a market for equity and debt of SMEs arising from the regulation of banks, pension funds, life insurance companies and other financial institutions?

Generally no. Lending to SMEs generally requires less regulation than to consumers. It is the difficulty of being able to build an efficient, scalable model that is the largest impediment.

Is there a role for banks in promoting a market for equity and debt instruments for SMEs?

The banks could support a market for lending to SMEs. In the UK, there is a project being run by HM Treasury and the British Business Bank which will

require mainstream lenders who have declined an SME to offer that SME the opportunity for their details to be passed to one of 4-6 nominated platforms. The aim is for these platforms to facilitate the matching of these SMEs to the most appropriate small business lender. This seems like an efficient approach, as it encourages SMEs to continue their search for finance beyond their traditional high street bank, and provides an efficient channel for alternative finance providers to access SMEs who are actively in the market for their products. The platforms themselves may also play an important role in educating SMEs as to their various options, and impartially helping them select the most appropriate provider from a "whole of market" population of lenders.

How to these platforms function, and who are the participant on the lending side?

At the moment, these platforms have not been formally designated, so it is not clear how they will function. We believe the primary candidates at this stage are existing online SME loan brokerages. It is envisaged that formal designation of the platforms will take place before the end of 2015. Based on the draft legislation[58], any SME lender would be technically eligible to access details of declined customers for the purpose of offering them finance. We would anticipate that the participants mentioned above would seek to access these customer leads.

Whilst banks face regulatory and technical issues in implementing schemes such as this, making the extra effort to help their SME customers via promoting new markets in which they could find finance could also benefit banks in the long run. Customers are more likely to maintain their everyday banking relationships with a provider who is seen to have provided good customer service, rather than simply saying "no". Additionally, helping their customer find funding for growth may well lead to increased procuration of services from the bank in the future – including those lending products which at present are out of reach. As such there is not simply a role for banks to play in promoting markets – there are benefits to them doing so.

58. The Small and Medium Sized Business (finance platforms) Regulations, 2015, available at https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/389210/The_Small_and_Medium_Sized_Business__Finance_Platforms__Regulations_2015_Regulations_draft_statutory_instrument.pdf

Figure 1 – The UK Unsecured – Short Term SMEs loan market

Company	Interest Rate (annual)		Interest Rate (monthly)	
	Low	High	Low	High
Ashley Business Finance	60.0%	72.0%	5.00%	6.00%
Capital On Tap	9.5%	88.8%	0.79%	7.40%
Credit4	N/A	30.0%	N/A	2.50%
ezbob	18.0%	60.0%	1.75%	5.00%
Fleximize	36.0%	48.0%	3.00%	4.00%
Funding Circle	6.0%	11.0%	0.50%	0.92%
Funding Knight	8.8%	12.0%	0.73%	1.00%
GLE Business Loans	5.0%	16.0%	0.42%	1.33%
Growth Street	8.0%	15.0%	0.67%	1.25%
iwoca	24.0%	72.0%	2.00%	6.00%
Just Cashflow	18.3%	146.0%	1.52%	12.17%
Merchant Money	24.0%	24.0%	2.00%	2.00%
Ultimate Business Cash	18.2%	18.2%	1.52%	1.52%

Source: *these figures provide a partial overview of unsecured – short term SMEs loan in the UK. The information provided are collected from the company's website, with the exception of Ashley Business Finance and Fleximize.*

ISSN 2421-6917

PUBLISHED BY
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